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| UNITED STATES OF AMERICA, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | CIVIL ACTION NO. |
| |) | |
| THE KANSAS CITY SOUTHERN |) | |
| RAILWAY CO., |) | |
| |) | |
| Defendant. |) | |
| |) | |

CONSENT DECREE

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I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606, 9607.

B. The United States in its complaint seeks, inter alia: (1) reimbursement of costs incurred by EPA and the Department of Justice for response actions at the Ruston Foundry Superfund Site in Alexandria, Rapides Parish, Louisiana ("the Site"), together with accrued interest; and (2) performance of studies and response work by the defendant at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of Louisiana (the "State") on May 14, 2003, of negotiations with potentially responsible parties regarding the implementation of the remedial design and remedial action for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the Department of Interior of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Consent Decree. By letter dated August 11, 1999, the Department of Interior decided not to participate in the Superfund planning process at that time.

E. The defendant which signed this Consent Decree ("Settling Defendant") does not admit any liability to the Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous substance(s) at or from the Site constitutes an imminent or substantial endangerment to the public health or welfare or the environment.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on May 10, 1999, 64 Fed. Reg. 24949.

G. In response to a release or a substantial threat of a release of a hazardous substance(s) at or from the Site, EPA commenced on June 23, 1999, a Remedial Investigation and Feasibility Study ("RI/FS") for the Site pursuant to 40 C.F.R. § 300.430.

H. EPA completed a Remedial Investigation ("RI") Report on February 1, 2002, and a Feasibility Study ("FS") Report on February 1, 2002.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action on April 1, 2002, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

J. The decision by EPA on the remedial action to be implemented at the Site is embodied in a final Record of Decision ("ROD"), executed on June 24, 2002, on which the State had a reasonable opportunity to review and comment/on which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

K. EPA amended the ROD based on new information received from the City of Alexandria and Settling Defendant after the ROD was finalized. During a meeting held on February 26, 2004, the City of Alexandria informed EPA that it had modified its plans regarding future Site re-use. During settlement negotiations, Settling Defendant produced additional information regarding slag stabilization. Based on the new information, EPA modified the selected remedy as documented in the Explanation of Significant Differences ("ESD") executed on September 28, 2004 on which the state had a reasonable opportunity to review and comment and on which the State has given its concurrence. The ESD includes a responsiveness summary to the public comments. Notice of the final plan was published on October 7, 2004 in accordance with Section 117(b) of CERCLA.

L. In September 2004, Settling Defendant submitted to EPA for review and comment a draft Remedial Design and Implementation Work Plan. The Remedial Design and Implementation Work Plan included elements of both a Remedial Design Work Plan, see Consent Decree Paragraph 10, and a Remedial Action Work Plan, see Consent Decree Paragraph 11(a). On November 8, 2006, EPA issued a comment letter stating that EPA and the Louisiana Department of Environmental Quality had reviewed the Remedial Design and Implementation Work Plan and requesting specific changes. Subsequently, Settling Defendant and EPA engaged in extensive discussions concerning technical issues in the draft Remedial Design and Implementation Work Plan, including the possible implementation of the "Contingency Remedy" as set forth in Section VI (Description of Significant Differences), Contingency Remedy on page nine of twenty-nine of the September 28, 2004 Explanation of Significant Differences (Appendix B). By letter dated September 13, 2007, Settling Defendant advised EPA that it accepts all of EPA's comments in EPA's November 8, 2006 comment letter and also provided a treatability study as support for implementation of the Contingency Remedy, with off-site stabilization of slag. EPA reviewed the Settling Defendant's September 13, 2007 letter and found that it supported implementation of the Contingency Remedy, with off-site stabilization of slag, and is generally acceptable, subject to review of the final details in a revised Remedial Design and Implementation Work Plan. As set forth in Section VI (Description of Significant Differences), Contingency Remedy on page nine of twenty-nine of the September 28, 2004 Explanation of Significant Differences (Appendix B), the Parties recognize that

implementation of the Contingency Remedy will require EPA to issue a second Explanation of Significant Differences documenting implementation of the contingency remedy. It is anticipated that Settling Defendant will submit to EPA a new draft of the Remedial Design and Implementation Work Plan which will be revised in accordance with the comments in EPA's November 8, 2006 letter and will incorporate provisions related to implementation of the Contingency Remedy. The Parties anticipate that if Settling Defendant submits a new draft of the Remedial Design and Implementation Work Plan that includes the changes described in the previous sentence and EPA approves the Remedial Design and Implementation Work Plan, then the approved Remedial Design and Implementation Work Plan will satisfy, inter alia, the requirements of Paragraphs 10 and 11(a) and (b) of this Consent Decree.

M. EPA anticipates that, except for Operation and Maintenance, the work required by the remedial action selected in the ROD, as amended by the ESD, will be completed within one year of the Effective date of this Consent Decree.

N. Based on the information presently available to EPA, EPA believes that the Work will be properly and promptly conducted by the Settling Defendant if conducted in accordance with the requirements of this Consent Decree and its appendices.

O. Solely for the purposes of Section 113(j) of CERCLA, the Remedial Action selected by the ROD, as amended by the ESD, and the Work to be performed by the Settling Defendant shall constitute a response action taken or ordered by the President.

P. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendant. Solely for the purposes of this Consent Decree and the underlying complaint, Settling Defendant waives all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendant shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States and upon Settling Defendant and their heirs, successors and assigns. Any change in ownership or corporate status of Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's responsibilities under this Consent Decree.

3. Settling Defendant shall provide a copy of this Consent Decree to each contractor hired to perform the Work (as defined below) required by this Consent Decree and to each person representing any Settling Defendant with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Defendant or its contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Defendant shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Defendant within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

- "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*
- "Consent Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Decree and any appendix, this Decree shall control.
- "Day" shall mean a calendar day unless expressly stated to be a Working Day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next Working Day.
- "Effective Date" shall be the effective date of this Consent Decree as provided in Paragraph 107.

- “EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- “Explanation of Significant Differences” or “ESD” shall mean the EPA Explanation of Significant Differences relating to the Site signed on September 28, 2004 by the Regional Administrator, EPA Region 6 or his/her delegate, and all attachments thereto. The ESD is attached as Appendix B. The term shall also include any second Explanation of Significant Differences documenting implementation of the contingency remedy as set forth in Section VI (Description of Significant Differences), Contingency Remedy on page nine of twenty-nine of the September 28, 2004 Explanation of Significant Differences.
- “Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Sections IX (Access and Institutional Controls) including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls (including, but not limited to, the amount of just compensation), XV (Emergency Response), and Paragraph 88 of Section XXI (Covenants Not to Sue By Plaintiff). Future Response Costs shall also include all Interim Response Costs, and all Interest on those Past Response Costs Settling Defendant have agreed to reimburse under this Consent Decree that has accrued pursuant to 42 U.S.C. § 9607(a) during the period from October 30, 2006 to the date of entry of this Consent Decree.
- “Interim Response Costs” shall mean all costs, including direct and indirect costs, (a) paid by the United States in connection with the Site between October 30, 2006 and the Effective Date, or (b) incurred prior to the Effective Date but paid after that date.
- “Interest,” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.
- “LDEQ” shall mean the Louisiana Department of Environmental Quality and any successor departments or agencies of the State.
- “National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

- “Operation and Maintenance” or “O & M” shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Consent Decree and the Statement of Work.
- “Paragraph” shall mean a portion of this Consent Decree identified by an arabic numeral or an upper case letter.
- “Parties” shall mean the United States and the Settling Defendant.
- “Past Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site through October 30, 2006, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through such date.
- “Performance Standards” shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action, set forth in Section 15 of the ROD as amended by the ESD.
- “Plaintiff” shall mean the United States.
- “RCRA” shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 *et seq.* (also known as the Resource Conservation and Recovery Act).
- “Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Ruston Foundry Superfund Site signed on June 24, 2002, by the Regional Administrator, EPA Region 6 or his/her delegate and all attachments thereto, as amended by the ESD and by any second Explanation of Significant Differences documenting implementation of the contingency remedy as set forth in Section VI (Description of Significant Differences), Contingency Remedy on page nine of twenty-nine of the September 28, 2004 Explanation of Significant Differences. The ROD is attached as Appendix A.
- “Remedial Action” shall mean those activities, except for Operation and Maintenance, to be undertaken by the Settling Defendant to implement the ROD, in accordance with the SOW and the final Remedial Design and Remedial Action Work Plans and other plans approved by EPA.
- “Remedial Action Work Plan” shall mean the document developed pursuant to Paragraph 11 of this Consent Decree and approved by EPA, and any amendments thereto.
- “Remedial Design” shall mean those activities to be undertaken by Settling Defendant to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

- “Remedial Design Work Plan” shall mean the document developed pursuant to Paragraph 10 of this Consent Decree and approved by EPA, and any amendments thereto.
- “Section” shall mean a portion of this Consent Decree identified by a Roman numeral.
- “Settling Defendant” shall mean The Kansas City Southern Railway Company.
- “Site” shall mean the Ruston Foundry Superfund Site, encompassing approximately 6.6 acres, located at 1010 Bogan Street in Alexandria, Rapides Parish, Louisiana, and depicted generally on the map attached as Appendix D.
- “State” shall mean the State of Louisiana.
- “Statement of Work” or “SOW” shall mean the statement of work for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at the Site, as set forth in Appendix C to this Consent Decree and any modifications made in accordance with this Consent Decree.
- “Supervising Contractor” shall mean the principal contractor retained by the Settling Defendant to supervise and direct the implementation of the Work under this Consent Decree.
- “United States” shall mean the United States of America.
- “Waste Material” shall mean (1) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); and (3) any “solid waste” under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).
- “Work” shall mean all activities Settling Defendant is required to perform under this Consent Decree, except those required by Section XXV (Retention of Records).
- “Working Day” shall mean a day other than a Saturday, Sunday, or Federal holiday.

V. GENERAL PROVISIONS

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment at the Site by the design and implementation of response actions at the Site by the Settling Defendant, to reimburse response costs of the Plaintiff, and to resolve the claims of Plaintiff against Settling Defendant as provided in this Consent Decree.

6. Commitments by Settling Defendant. Settling Defendant shall finance and perform the Work in accordance with this Consent Decree, the ROD, the SOW, and all work

plans and other plans, standards, specifications, and schedules set forth herein or developed by Settling Defendant and approved by EPA pursuant to this Consent Decree. Settling Defendant shall also reimburse the United States for Past Response Costs and Future Response Costs as provided in this Consent Decree.

7. Compliance With Applicable Law. All activities undertaken by Settling Defendant pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. Settling Defendant must also comply with all applicable or relevant and appropriate requirements of all Federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP.

8. Permits.

a. As provided in Section 121(e) of CERCLA and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Defendant may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

VI. PERFORMANCE OF THE WORK BY SETTLING DEFENDANT

9. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Settling Defendant pursuant to Sections VI (Performance of the Work by Settling Defendant), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Decree shall be under the direction and supervision of the Supervising Contractor. Settling Defendant has demonstrated to EPA that it has a quality system that complies with ANSI/ASQ E4-2004, "Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use" (American National Standard, 2004). Accordingly, entry of this Consent Decree by the Court shall constitute authorization for Settling Defendant to proceed as Supervising Contractor. At any time after entry of this Consent Decree, Settling Defendant may propose to change the Supervising Contractor

by notifying EPA. The new Supervising Contractor selected by Settling Defendant shall be subject to disapproval by EPA, after a reasonable opportunity for review and comment by the State. If Settling Defendant proposes to change the Supervising Contractor, it shall notify EPA in writing of the name, title, and qualifications of any contractor proposed to be the new Supervising Contractor. Settling Defendant shall demonstrate that the proposed Supervising Contractor has a quality system that complies with ANSI/ASQ E4-2004, "Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use" (American National Standard, 2004), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001, reissue notice May 2006) or equivalent documentation as determined by EPA. EPA will issue a notice of disapproval or an authorization to proceed. No proposed Supervising Contractor may perform, direct, or supervise any Work under this Consent Decree until EPA has issued an authorization for the proposed Supervising Contractor to proceed.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify Settling Defendant in writing. Settling Defendant may submit to EPA a list of potential Supervising Contractors acceptable to Settling Defendant and a description of the qualifications of each proposed Supervising Contractor. If Settling Defendant submits such a list, EPA will provide written notice of the names of any proposed Supervising Contractor(s) that it disapproves and an authorization to proceed with respect to the other proposed Supervising Contractor(s). Settling Defendant may select any proposed Supervising Contractor for which EPA issues an authorization to proceed and shall notify EPA of the name of the Supervising Contractor selected within twenty-one (21) days of Settling Defendant's selection.

10. Remedial Design.

a. Within 30 days after the Effective Date of this Consent Decree, Settling Defendant shall submit to EPA and the State a work plan for the design of the Remedial Action at the Site ("Remedial Design Work Plan" or "RD Work Plan"). The Remedial Design Work Plan shall provide for design of the remedy set forth in the ROD, in accordance with the SOW and for achievement of the Performance Standards and other requirements set forth in the ROD, this Consent Decree and/or the SOW. Upon its approval by EPA, the Remedial Design Work Plan shall be incorporated into and become enforceable under this Consent Decree. Within 30 days after the Effective Date of this Consent Decree, the Settling Defendant shall submit to EPA and the State a Health and Safety Plan for field design activities which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The remedial design work plan shall include plans and schedules for implementation of all remedial design and pre-design tasks identified in the SOW,

including, but not limited to, plans and schedules for the completion of: (1) a site management plan (including a pollution control and mitigation plan and a waste management plan); (2) Sample and Analysis Plan (including a quality assurance project plan, field sampling plan, and data management plan); (3) treatability study work plan, if required; and (4) submission of a Final Remedial Design to EPA for review and approval under Section XI (EPA Approval of Plans and Other Submissions). In addition, the Remedial Design Work Plan shall include a schedule for completion of the Remedial Action Work Plan.

c. Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submittal of the Health and Safety Plan for all field activities to EPA and the State, Settling Defendant shall implement the Remedial Design Work Plan. The Settling Defendant shall submit to EPA and the State all plans, submittals and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Defendant shall not commence further Remedial Design activities at the Site prior to approval of the Remedial Design Work Plan.

d. The Final Remedial Design shall include design assumptions and parameters, including (1) waste characterization; (2) pretreating requirements; (3) volume and types of each medium requiring treatment; (4) treatment schemes (including all media and byproducts), rates, and required qualities of waste streams (i.e., input and output rates, influent and effluent qualities, potential air emissions, and so forth); (5) performance standards; (6) long-term performance monitoring and operations and maintenance (O&M) requirements; (7) compliance with all ARARs, pertinent codes, and standards; and, (8) technical factors of importance to the design and construction including use of currently accepted environmental control measures, constructability of the design, and use of currently acceptable construction practices and techniques. Specifically, the final design will include, but is not limited to, (1) project construction schedule; (2) design drawings and specifications; (3) basis for design; (4) air and surface water monitoring plans; (5) construction quality assurance plan; and (6) biddability, constructability, operability reviews.

11. Remedial Action.

a. Within 30 days after the approval of the Final Remedial Design, Settling Defendant shall submit to EPA and the State a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan"). The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the ROD and achievement of the Performance Standards, in accordance with this Consent Decree, the ROD, the SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan and approved by EPA. Upon its

approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the same time as they submit the Remedial Action Work Plan, Settling Defendant shall submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Action Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Action Work Plan shall include, but not limited to, the following: (1) schedule for completion of the Remedial Action; (2) method for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action plans and Final Report; (4) updated site specific plans; (5) methods for satisfying permitting requirements; (6) methodology for implementation of the activities required under the Remedial Design (7) Operation and Maintenance Plan; (8) methodology for implementation of the Construction Quality Assurance Plan and a schedule for implementation of all Remedial Action tasks identified in the final design submittal; (9) Remedial Action Project Team (including, but not limited to, the Supervising Contractor); (10) methodology for observation and monitoring daily construction activities, procedures, and inspections.

c. Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State, Settling Defendant shall implement the activities required under the Remedial Action Work Plan. The Settling Defendant shall submit to EPA and the State all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, Settling Defendant shall not commence physical Remedial Action activities at the Site prior to approval of the Remedial Action Work Plan.

12. The Settling Defendant shall continue to implement the Remedial Action and O&M until the Performance Standards are achieved and for so long thereafter as is otherwise required under this Consent Decree.

13. Modification of the SOW or Related Work Plans.

a. If EPA determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, EPA may require that such modification be incorporated in the SOW and/or such work plans, provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is consistent with the scope of the remedy selected in the ROD.

b. For the purposes of this Paragraph 13 and Paragraphs 50 and 51 only, the "scope of the remedy selected in the ROD" is Stabilization and Offsite Disposal (as that term is used on page 25 of the ROD (Appendix A) with an Excavation and Offsite Disposal Contingency Remedy (as that term is used on page 9 of the ESD (Appendix B).

c. If Settling Defendant objects to any modification determined by EPA to be necessary pursuant to this Paragraph, they may seek dispute resolution pursuant to Section XIX (Dispute Resolution), Paragraph 68 (record review). The SOW and/or related work plans shall be modified in accordance with final resolution of the dispute.

d. Settling Defendant shall implement any work required by any modifications incorporated in the SOW and/or in work plans developed pursuant to the SOW in accordance with this Paragraph.

e. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Consent Decree.

14. Settling Defendant acknowledge and agree that nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by the Plaintiff that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

15. a. Settling Defendant shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

(1) The Settling Defendant shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The Settling Defendant shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

(2) The identity of the receiving facility and state will be determined by the Settling Defendant following the award of the contract for Remedial Action construction. The Settling Defendant shall provide the information required by Paragraph 15(a) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Settling Defendant shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3) and 40 C.F.R. 300.440. Settling Defendant shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulations cited in the preceding sentence.

VII. REMEDY REVIEW

16. Periodic Review. Settling Defendant shall conduct any studies and investigations as requested by EPA (in consultation with Settling Defendant) in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five years as required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations.

17. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

18. Opportunity To Comment. Settling Defendant and, if required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. §§ 9613(k)(2) or 9617, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and to submit written comments for the record during the comment period.

19. Settling Defendant's Obligation To Perform Further Response Actions. If EPA selects further response actions for the Site, the Settling Defendant shall undertake such further response actions to the extent that the reopener conditions in Paragraph 84 or Paragraph 85 (United States' reservations of liability based on unknown conditions or new information) are satisfied. Settling Defendant may invoke the procedures set forth in Section XIX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 84 or Paragraph 85 of Section XXI (Covenants Not To Sue by Plaintiff[s]) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 68 (record review).

20. Submissions of Plans. If Settling Defendant is required to perform the further response actions pursuant to Paragraph 19, they shall submit a plan for such work to EPA for approval in accordance with the procedures set forth in Section VI (Performance of the Work by Settling Defendant) and shall implement the plan approved by EPA in accordance with the provisions of this Decree.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

21. Settling Defendant shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" (EPA/240/B-01/003, March 2001, reissue Notice May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/240/R-02/009, December 2002), and subsequent amendments to such guidelines upon notification by EPA to Settling Defendant of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Decree, Settling Defendant shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Decree. Settling Defendant shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Defendant in implementing this Consent Decree. In addition, Settling Defendant shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. Settling Defendant shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in EPA's Superfund Analytical Services/Contract Laboratory Program for Inorganic Analysis and Organic Analysis, (<http://www.epa.gov/superfund/programs/clp/index.htm>) and any amendments made thereto during the course of the implementation of this Decree; however, upon approval by EPA, after opportunity for review and comment by the State, the Settling Defendant may use other analytical methods which are as stringent as or more stringent than the CLP- approved methods. Settling Defendant shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA equivalent QA/QC program. Settling Defendant shall only use laboratories that have a documented Quality System which complies with ANSI/ASQ E4-2004, "Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use" (American National Standard, 2004), "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001, reissue Notice May 2006), and/or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) as meeting the Quality System requirements. Settling Defendant shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

22. Upon request, the Settling Defendant shall allow split or duplicate samples to be taken by EPA, the State or their authorized representatives. Settling Defendant shall notify EPA and the State not less than thirty (30) days in advance of any sample collection activity unless

shorter notice is agreed to by EPA. In addition, EPA and the State shall have the right to take any additional samples that EPA or the State deem necessary. Upon request, EPA and the State shall allow the Settling Defendant to take split or duplicate samples of any samples they take as part of the Plaintiff's oversight of the Settling Defendant's implementation of the Work.

23. Settling Defendant shall submit to EPA (an electronic compact disk copy in Adobe Acrobat format) and to the State (3 copies) of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Defendant with respect to the Site and/or the implementation of this Consent Decree unless EPA agrees otherwise.

24. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

25. With regard to the Site and any other property that is owned or controlled by persons other than Settling Defendant where access and/or land/water use restrictions are needed to implement this Consent Decree, Settling Defendant shall use best efforts to secure from such persons:

a. An agreement to provide access thereto for Settling Defendant, as well as for the United States on behalf of EPA, and the State, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Decree including, but not limited to, the following activities:

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States;
- (3) Conducting investigations relating to contamination at or near the Site;
- (4) Obtaining samples;
- (5) Assessing the need for, planning, or implementing additional response actions at or near the Site;
- (6) Assessing implementation of quality assurance and quality control practices as defined in the approved Quality Assurance Project Plans;
- (7) Implementing the Work pursuant to the conditions set forth in Paragraph 88 of this Consent Decree;

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendant or their agents, consistent with Section XXIV (Access to Information);

(9) Assessing Settling Defendant's compliance with this Consent Decree; and

(10) Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree;

b. consistent with the Institutional Control for Ruston Foundry described in Appendix E of the Explanation of Significant Differences (Appendix B), the recordation in the mortgage and conveyance records of Rapides Parish, State of Louisiana, of a notice of the location and types of hazardous substances on the Site in accordance with Louisiana Revised Statute 30:2039 (2000). The notice shall be in substantially the form shown in Appendix E to this Consent Decree.

26. If (a) the access agreements and notices required by Paragraph 25 of this Consent Decree are not obtained within forty-five (45) days of the date of entry of this Consent Decree, Settling Defendant shall promptly notify the United States in writing, and shall include in that notification a summary of the steps that Settling Defendant took to attempt to comply with Paragraph 25 of this Consent Decree. The United States may, as it deems appropriate, assist Settling Defendant in obtaining access or arranging for the recordation of a notice. Settling Defendant shall reimburse the United States in accordance with the procedures in Section XVI (Payment for Response Costs), for all costs incurred, direct or indirect, by the United States in obtaining such access or arranging for the recordation of a notice including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

27. If EPA determines that land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are needed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Settling Defendant shall cooperate with EPA's efforts to secure such governmental controls.

28. Notwithstanding any provision of this Consent Decree, the United States retains all of its access authorities and rights, as well as all of its rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

29. As set forth in the Statement of Work (Appendix C), Section D(5) and in addition to any other requirement of this Consent Decree, Settling Defendant shall submit to EPA (an electronic compact disk copy in Adobe Acrobat format) and the State (three (3) copies) of written monthly progress reports that:

(a) Describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous month;

(b) Include a summary of all results of sampling and tests and of all other data received or generated by Settling Defendant or their contractors or agents in the previous month;

(c) Identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted during the previous month;

(d) Describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next four weeks and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and/or Pert charts;

(e) Include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) Include any modifications to the work plans or other schedules that Settling Defendant have proposed to EPA or that have been approved by EPA; and

(g) Describe all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next four weeks.

Settling Defendant shall submit these progress reports to EPA and the State by the tenth (10th) day of every month following the entry of this Consent Decree until EPA notifies the Settling Defendant pursuant to Paragraph 51(b) of Section XIV (Certification of Completion). If requested by EPA, Settling Defendant shall also provide briefings for EPA to discuss the progress of the Work.

30. Settling Defendant shall notify EPA of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven (7) days prior to the performance of the activity.

31. Upon the occurrence of any event during performance of the Work that Settling Defendant is required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), Settling Defendant shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Prevention and Response Branch of the Superfund Division, Region 6, United States Environmental Protection Agency at (866) 372-7745. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

32. Within twenty (20) days of the onset of an event during performance of the Work that Settling Defendant is required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act ("EPCRA"), Settling Defendant shall furnish to Plaintiff a written report, signed by the Settling Defendant's Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within thirty (30) days of the conclusion of such an event, Settling Defendant shall submit a report setting forth all actions taken in response thereto. If EPA and/or its contractors conduct emergency response activities related to such an event, EPA shall, if so requested by Settling Defendant, provide to Settling Defendant all non-privileged notes, memoranda, photographs, and sampling results related to the emergency response activity.

33. Settling Defendant shall submit two copies (one paper copy and one electronic compact disk in Adobe Acrobat format) of all plans, reports, and data required by SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans in accordance with the schedules set forth in such plans. Settling Defendant shall simultaneously submit three (3) paper copies of all such plans, reports and data to the State.

34. All reports and other documents submitted by Settling Defendant to EPA (other than the monthly progress reports referred to above) which purport to document Settling Defendant's compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Defendant.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

35. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Defendant modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Settling Defendant at least one notice of deficiency and an opportunity to cure within twenty (20) days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the

deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

36. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 35(a), (b), or (c), Settling Defendant shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 35(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

37. Resubmission of Plans.

a. Upon receipt of a notice of disapproval pursuant to Paragraph 35(d), Settling Defendant shall, within twenty (20) days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX (Stipulated Penalties), shall accrue during the twenty (20) day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 38 and 39.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 35(d), Settling Defendant shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Settling Defendant of any liability for stipulated penalties under Section XX (Stipulated Penalties).

38. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Defendant to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item. Settling Defendant shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XIX (Dispute Resolution).

39. If upon resubmission, a plan, report, or item is disapproved or modified by EPA due to a material defect, Settling Defendant shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Defendant invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX (Stipulated Penalties).

40. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent Decree. In the event EPA approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

41. Within twenty (20) days of lodging this Consent Decree, Settling Defendant, the State, and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least five (5) Working Days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Defendant's Project Coordinator and Alternate Project Coordinators shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. Settling Defendant's Project Coordinator shall not be an attorney for Settling Defendant in this matter. Settling Defendant's Project Coordinator may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of daily operations during remedial activities.

42. Plaintiff may designate other representatives, including, but not limited to, EPA, and federal contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

43. EPA's Project Coordinator and the Settling Defendant's Project Coordinator will meet, at a minimum, on a weekly basis (unless EPA agrees to modify the frequency), either in person or via teleconference, until EPA issues the Certification of Completion under Paragraph 50(b).

XIII. PERFORMANCE GUARANTEE

44. In order to ensure the full and final completion of the Work, Settling Defendant shall establish and maintain a Performance Guarantee for the benefit of EPA in the amount of \$3,500,000 (hereinafter "Estimated Cost of the Work") in one or more of the following forms, which must be satisfactory in form and substance to EPA:

a. A surety bond unconditionally guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on Federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. One or more irrevocable letters of credit, payable to or at the direction of EPA, that is issued by one or more financial institution(s) (i) that has the authority to issue letters of credit and (ii) whose letter-of-credit operations are regulated and examined by a U.S. Federal or State agency;

c. A trust fund established for the benefit of EPA that is administered by a trustee (i) that has the authority to act as a trustee and (ii) whose trust operations are regulated and examined by a U.S. Federal or State agency;

d. A policy of insurance that (i) provides EPA with acceptable rights as a beneficiary thereof; and (ii) is issued by an insurance carrier (a) that has the authority to issue insurance policies in the applicable jurisdiction(s) and (b) whose insurance operations are regulated and examined by a State agency;

e. A demonstration that Settling Defendant meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied; or

f. A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of a Settling Defendant, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with Settling Defendant; provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work that it proposes to guarantee hereunder.

45. Settling Defendant has selected, and EPA has approved, as an initial Performance Guarantee an irrevocable letter of credit pursuant to Paragraph 44(b), in the form attached hereto as Appendix F. Within ten days after entry of this Consent Decree, Settling Defendant shall execute or otherwise finalize all instruments or other documents required in order to make the selected Performance Guarantee legally binding in a form substantially similar to the documents attached hereto as Appendix F, and such Performance Guarantee shall thereupon be fully effective. Within thirty days of entry of this Consent Decree, Settling Defendant shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected Performance Guarantee legally binding to the EPA Regional Financial Management Officer in accordance with Section XXVI (Notices and Submissions) of this Consent Decree and to the United States and to EPA as specified in Section XXVI (Notices and Submissions). Settling Defendant may propose to the United States an alternate form of irrevocable letter of credit, and, if the United States notifies Settling Defendant that the alternate form of irrevocable

letter of credit is acceptable, then Settling Defendant may use the alternate form of irrevocable letter of credit instead of Appendix F.

46. If at any time during the effective period of this Consent Decree, the Settling Defendant provides a Performance Guarantee for completion of the Work by means of a demonstration or guarantee pursuant to Paragraph 44(e) or Paragraph 44(f) above, such Settling Defendant shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f) and 40 C.F.R. § 264.151(h)(1) relating to these methods unless otherwise provided in this Consent Decree, including but not limited to (i) the initial submission of required financial reports and statements from the relevant entity's chief financial officer and independent certified public accountant; (ii) the annual re-submission of such reports and statements within ninety (90) days after the close of any fiscal year in which such entity no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1). For purposes of the Performance Guarantee methods specified in this Section XIII, references in 40 C.F.R. Part 264, Subpart H, to "closure," "post-closure", and "plugging and abandonment" shall be deemed to refer to the Work required under this Consent Decree, and the terms "current closure cost estimate" "current post-closure cost estimate", and "current plugging and abandonment cost estimate" shall be deemed to refer to the Estimated Cost of the Work.

47. In the event that EPA determines at any time that a Performance Guarantee provided by the Settling Defendant pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in the Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, or in the event that any Settling Defendant becomes aware of information indicating that a Performance Guarantee provided pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, Settling Defendant, within thirty (30) days of receipt of notice of EPA's determination or, as the case may be, within thirty (30) days of Settling Defendant becoming aware of such information, shall obtain and present to EPA for approval a proposal for a revised or alternative form of Performance Guarantee listed in Paragraph 44 of this Consent Decree that satisfies all requirements set forth in this Section. In seeking approval for a revised or alternative form of Performance Guarantee, Settling Defendant shall follow the procedures set forth in Paragraph 49(b)(ii) of this Consent Decree. Settling Defendant's inability to post a Performance Guarantee for completion of the Work shall in no way excuse performance of any other requirements of this Consent Decree, including, without limitation, the obligation of Settling Defendant to complete the Work in strict accordance with the terms hereof.

48. The commencement of any Work Takeover pursuant to Paragraph 88 of this Consent Decree shall trigger EPA's right to receive the benefit of any Performance Guarantee(s) provided pursuant to Paragraph 44(a), (b), (c), (d), or (f), and at such time EPA shall have immediate access to resources guaranteed under any such Performance Guarantee(s), whether in cash or in kind, as needed to continue and complete the Work assumed by EPA under the Work Takeover. If for any reason EPA is unable to promptly secure the resources guaranteed under any such Performance Guarantee(s), whether in cash or in kind, necessary to continue and

complete the Work assumed by EPA under the Work Takeover, or in the event that the Performance Guarantee involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 44(e), Settling Defendant(s) shall immediately upon written demand from EPA deposit into an account specified by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed as of such date, as determined by EPA.

49. Modification of Amount and/or Form of Performance Guarantee.

a. If Settling Defendant believes that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 44 above, Settling Defendant(s) may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a reduction in the amount of the Performance Guarantee provided pursuant to this Section so that the amount of the Performance Guarantee is equal to the estimated cost of the remaining Work to be performed. Settling Defendant shall submit a written proposal for such reduction to EPA that shall specify, at a minimum, the cost of the remaining Work to be performed and the basis upon which such cost was calculated. In seeking approval for a revised or alternative form of Performance Guarantee, Settling Defendant shall follow the procedures set forth in Paragraph 49(b)(ii) of this Consent Decree. If EPA decides to accept such a proposal, EPA shall notify the petitioning Settling Defendant(s) of such decision in writing. After receiving EPA's written acceptance, Settling Defendant(s) may reduce the amount of the Performance Guarantee in accordance with and to the extent permitted by such written acceptance. In the event of a dispute, Settling Defendant(s) may reduce the amount of the Performance Guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute. No change to the form or terms of any Performance Guarantee provided under this Section, other than a reduction in amount, is authorized except as provided in Paragraphs 47 or 49(b) of this Consent Decree.

b. Change of Form of Performance Guarantee.

(i) If, after entry of this Consent Decree, Settling Defendant desires to change the form or terms of any Performance Guarantee(s) provided pursuant to this Section, Settling Defendant may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a change in the form of the Performance Guarantee provided hereunder. The submission of such proposed revised or alternative form of Performance Guarantee shall be as provided in Paragraph 49(b)(ii) of this Consent Decree. Any decision made by EPA on a petition submitted under this subparagraph (b)(i) shall be made in EPA's sole and unreviewable discretion, and such decision shall not be subject to challenge by Settling Defendant pursuant to the dispute resolution provisions of this Consent Decree or in any other forum.

(ii) Settling Defendant shall submit a written proposal for a revised or alternative form of Performance Guarantee to EPA which shall specify, at a minimum, the estimated cost of the remaining Work to be performed, the basis upon which such cost was calculated, and the proposed revised form of Performance Guarantee, including all proposed instruments or other documents required in order to make the proposed Performance Guarantee legally binding. The proposed revised or alternative form of Performance Guarantee must satisfy all requirements set forth or incorporated by reference in this Section. Settling Defendant shall submit such proposed revised or alternative form of Performance Guarantee to the EPA Regional Financial Management Officer in accordance with Section XXVI ("Notices and Submissions") of this Consent Decree. EPA shall notify Settling Defendant in writing of its decision to accept or reject a revised or alternative Performance Guarantee submitted pursuant to this subparagraph. Within ten (10) days after receiving a written decision approving the proposed revised or alternative Performance Guarantee, Settling Defendant shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected Performance Guarantee legally binding in a form substantially identical to the documents submitted to EPA as part of the proposal, and such Performance Guarantee(s) shall thereupon be fully effective. Settling Defendant shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected Performance Guarantee(s) legally binding to the EPA Regional Financial Management Officer and the United States within thirty (30) days of receiving a written decision approving the proposed revised or alternative Performance Guarantee in accordance with Section XXVI ("Notices and Submissions").

c. Release of Performance Guarantee. If Settling Defendant receives written notice from EPA in accordance with Paragraph 51 hereof that the Work has been fully and finally completed in accordance with the terms of this Consent Decree, or if EPA otherwise so notifies Settling Defendant in writing, Settling Defendant(s) may thereafter release, cancel, or discontinue the Performance Guarantee(s) provided pursuant to this Section. Settling Defendant shall not release, cancel, or discontinue any Performance Guarantee provided pursuant to this Section except as provided in this subparagraph. In the event of a dispute, Settling Defendant may release, cancel, or discontinue the Performance Guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute.

XIV. CERTIFICATION OF COMPLETION

50. Completion of the Remedial Action.

a. Within ninety (90) days after Settling Defendant concludes that the Remedial Action has been fully performed and the Performance Standards have been attained, Settling Defendant shall schedule and conduct a pre-certification inspection to

be attended by Settling Defendant, EPA, and the State. If, after the pre-certification inspection, the Settling Defendant still believe that the Remedial Action has been fully performed and the Performance Standards have been attained, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within thirty (30) days of the inspection. In the report, a registered professional engineer and the Settling Defendant's Project Coordinator shall state that the Remedial Action has been completed in full satisfaction of the requirements of this Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Defendant or the Settling Defendant's Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that the Remedial Action or any portion thereof has not been completed in accordance with this Consent Decree or that the Performance Standards have not been achieved, EPA will notify Settling Defendant in writing of the activities that must be undertaken by Settling Defendant pursuant to this Consent Decree to complete the Remedial Action and achieve the Performance Standards, provided, however, that EPA may only require Settling Defendant to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD" as that term is defined in Paragraph 13(b). EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree or require the Settling Defendant to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Remedial Action has been performed in accordance with this Consent Decree and that the Performance Standards have been achieved, EPA will so certify in writing to Settling Defendant. This certification shall constitute the Certification of Completion of the Remedial Action for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants Not to Sue by Plaintiff). Certification of Completion of the Remedial Action shall not affect Settling Defendant's obligations under this Consent Decree.

51. Completion of the Work.

a. Within ninety (90) days after Settling Defendant concludes that all phases of the Work (including O & M), have been fully performed, Settling Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling Defendant, EPA and the State. If, after the pre-certification inspection, the Settling Defendant still believe that the Work has been fully performed, Settling Defendant shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Defendant or the Settling Defendant's Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Defendant in writing of the activities that must be undertaken by Settling Defendant pursuant to this Consent Decree to complete the Work, provided, however, that EPA may only require Settling Defendant to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 13(b). EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree or require the Settling Defendant to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Defendant and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Consent Decree, EPA will so notify the Settling Defendant in writing.

XV. EMERGENCY RESPONSE

52. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Defendant shall, subject to Paragraph 53, immediately take all appropriate

action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Defendant shall notify the EPA Regional Duty Officer, Prevention and Response Branch at (866) 372-7745. Settling Defendant shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW and/or the Consent Decree. In the event that Settling Defendant fails to take appropriate response action as required by this Section, and EPA or, as appropriate, the State take such action instead, Settling Defendant shall reimburse EPA and the State all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payments for Response Costs).

53. Nothing in Paragraph 52 or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXI (Covenants Not to Sue by Plaintiff).

XVI. PAYMENTS FOR RESPONSE COSTS

54. Payments for Past Response Costs.

a. Within thirty (30) days of the Effective Date, Settling Defendant shall pay to EPA \$750,000 in payment for Past Response Costs. Payment shall be made by FedWire Electronic Funds Transfer ("EFT") to the U.S. Department of Justice account in accordance with current EFT procedures, referencing USAO File Number 2007V00529, EPA Site/Spill ID Number 061F, and DOJ Case Number 90-11-2-08002. Payment shall be made in accordance with instructions provided to Settling Defendant by the Financial Litigation Unit of the United States Attorney's Office for the Western District of Louisiana following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 p.m. (Eastern Time) will be credited on the next Working Day.

b. At the time of payment, Settling Defendant shall send notice that payment has been made to the United States in accordance with Section XXVI (Notices and Submissions), by email to "acctsreceivable.CINWD@epa.gov", and to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

and

Team Leader, Enforcement Assessment Team (6SF-TE)
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202-2733

c. The total amount to be paid by Settling Defendant pursuant to Subparagraph (a) shall be deposited in the EPA Hazardous Substance Superfund.

55. Payments for Future Response Costs.

a. Settling Defendant shall pay to EPA all Future Response Costs not inconsistent with the National Contingency Plan. All Future Response Costs shall be deposited in the Ruston Foundry RD/RA Future Costs Special Account within the EPA Hazardous Substance Superfund. All payments of Future Response Costs into the Ruston Foundry RD/RA Future Costs Special Account will be retained in the Ruston Foundry RD/RA Future Costs Special Account and used to conduct or finance response actions at or in connection with the Site, to be transferred by EPA to the EPA Hazardous Substance Trust Fund, or to be used in support of prior disbursements for response actions at or in connection with the Site.

b. EPA estimates that the amount of Future Response Costs that will be expended at this Site during the first year after the Effective Date of this Consent Decree will be \$58,800. Within thirty (30) days after the Effective Date of this Consent Decree, Settling Defendant shall forward an initial payment of \$58,800 to be deposited in the Ruston Foundry RD/RA Future Costs Special Account within the EPA Hazardous Substance Superfund, to be retained and used to conduct or finance response actions at or in connection with the Site. Payments shall be made by EFT, in accordance with EFT instructions provided by EPA, or by submitting a money order, cashier's check, or certified check payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, EPA Site/Spill ID Number 061F, and DOJ Case Number 90-11-2-08002. Settling Defendant shall send the check(s) to:

Mellon Bank
P.O. Box 371099M
Pittsburgh, PA 15251

Settling Defendant shall clearly mark the check or other transaction record "Acct. # (Ruston Foundry) 061F" and shall reference DOJ Case No. 90-11-2-08002 and U.S.A.O. Case No. 2007V00529.

c. At the time of payment, Settling Defendant shall send notice that payment has been made to the United States in accordance with Section XXVI (Notices and Submissions), by email to "acctsreceivable.CINWD@epa.gov", and to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

and

Team Leader, Enforcement Assessment Team (6SF-TE)
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, TX 75202-2733

d. Periodically, EPA will submit to Settling Defendant an accounting summary of Future Response Costs. The Future Response Costs accounting summary shall be in the form of an unreconciled Superfund Cost Recovery Package Imaging and Online System (SCORPIOS) Report or equivalent unreconciled EPA accounting summary.

e. If Settling Defendant needs any financial information or work performed information about a specific cost line item on the SCORPIOS Report, Settling Defendant shall contact in writing the EPA Project Coordinator to inquire about specific details. The EPA Project Coordinator, in consultation with the Chief of the Accounting Section, the Chief of the Cost Recovery Section, the Site attorney, or other Agency personnel as appropriate, shall within fourteen (14) days of being contacted by Settling Defendant use best efforts to provide the requested information. After the expiration of this fourteen (14) day period, Settling Defendant may request that EPA prepare and certify a Cost Package for the costs in question. The cost of preparing the Certified Cost Package shall be a Future Response Cost.

f. Settling Defendant may not invoke dispute resolution pursuant to Section XIX (Dispute Resolution) and Paragraph 56 regarding Future Response Costs until at least fourteen (14) days after Settling Defendant makes an inquiry of the EPA Project Coordinator as described in Subparagraph (e) regarding the disputed costs.

g. Unless, within thirty (30) days of receipt of the SCORPIOS Report or equivalent unreconciled EPA accounting summary, Settling Defendant contests the amounts shown in therein as provided in Paragraph 56, such amounts shall be final

Future Response Costs. If Settling Defendant contests the amounts as provided in Paragraph 56, then the final Future Response Costs are those determined to be due and owing at the conclusion of dispute resolution proceedings under Section XIX (Dispute Resolution). After final Future Response Costs total \$58,800, Settling Defendant shall pay all additional final Future Response Costs as provided in Subparagraph (b) above within fourteen days after the Future Response Costs become final.

h. If EPA notifies Settling Defendant in writing that EPA has determined it will not be incurring any additional response costs at the Site and Settling Defendant's total Future Response Cost payments exceed total final Future Response Costs, then EPA shall remit and return to Settling Defendant an amount equal to the excess of Settling Defendant's total Future Response Cost payments over total final Future Response Costs.

56. Settling Defendant may contest payment of any Future Response Costs under Paragraph 55 only if it determines that the United States has made an accounting error or if it alleges that a cost item that is included represents costs that are inconsistent with the NCP. Such objection shall be made in writing within thirty (30) days of receipt of the bill and must be sent to the United States as provided in Section XXVI (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. If the Settling Defendant prevails in dispute resolution of Future Response Costs, EPA will make adjustments to the Ruston Foundry RD/RA Future Costs Special Account to reflect the correct amount determined in the resolution of the dispute. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Defendant's obligation to reimburse the United States for its Future Response Costs.

57. In the event that the payments required by Paragraphs 54 or 55 are not timely made, Settling Defendant shall pay Interest on the unpaid balance. The Interest to be paid on Past Response Costs under this Paragraph shall begin to accrue on the Effective Date. The Interest on Future Response Costs shall begin to accrue on the date EPA provides an accounting summary of Future Response Costs expended from the Ruston Foundry RD/RA Future Costs Special Account pursuant to Paragraph 55(d). The Interest shall accrue through the date of the Settling Defendant's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiffs by virtue of Settling Defendant's failure to make timely payments under this Section including, but not limited to, payment of stipulated penalties pursuant to Paragraph 72. Settling Defendant shall make all payments required by this Paragraph in the manner described in Paragraph 55(b).

XVII. INDEMNIFICATION AND INSURANCE

58. Settling Defendant's Indemnification of the United States.

a. The United States does not assume any liability by entering into this agreement or by virtue of any designation of Settling Defendant as EPA's authorized representatives under Section 104(e) of CERCLA. Settling Defendant shall indemnify, save and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendant, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of Settling Defendant as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Defendant agree to pay the United States all costs it incurs including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Settling Defendant, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree. The United States shall not be held out as a party to any contract entered into by or on behalf of Settling Defendant in carrying out activities pursuant to this Consent Decree. Neither the Settling Defendant nor any such contractor shall be considered an agent of the United States.

b. The United States shall give Settling Defendant notice of any claim for which the United States plans to seek indemnification pursuant to this Paragraph, and shall consult with Settling Defendant prior to settling such claim.

59. Settling Defendant waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendant shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

60. No later than fifteen (15) days before commencing any on-site Work, Settling Defendant shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Subparagraph 50(b) of Section XIV (Certification of Completion) comprehensive general liability insurance with limits of \$1 million dollars, combined single limit, and automobile liability insurance with limits of \$1 million

dollars, combined single limit, naming the United States as an additional insured[s]. In addition, for the duration of this Consent Decree, Settling Defendant shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendant in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, Settling Defendant shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Defendant shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Defendant demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendant need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

61. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Defendant, of any entity controlled by Settling Defendant, or of Settling Defendant's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendant's best efforts to fulfill the obligation. The requirement that the Settling Defendant exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

62. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Defendant shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Associate Director, Prevention and Response Branch, EPA Region 6, within five (5) days of when Settling Defendant first knew that the event might cause a delay. Within five (5) days thereafter, Settling Defendant shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Defendant's rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of the Settling Defendant, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Defendant shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude Settling Defendant from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure.

Settling Defendant shall be deemed to know of any circumstance of which Settling Defendant, any entity controlled by Settling Defendant, or Settling Defendant's contractors knew or should have known.

63. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Settling Defendant in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Defendant in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

64. If the Settling Defendant elects to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than fifteen (15) days after receipt of EPA's notice. In any such proceeding, Settling Defendant shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendant complied with the requirements of Paragraphs 61 and 62, above. If Settling Defendant carries this burden, the delay at issue shall be deemed not to be a violation by Settling Defendant of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

65. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Defendant that have not been disputed in accordance with this Section.

66. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed twenty (20) days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party receives a written Notice of Dispute from the other party.

67. Statements of Position.

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within twenty-one (21) days after the conclusion of the informal negotiation period, Settling Defendant invoke the formal dispute resolution procedures of this Section by serving on the United States a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendant. The Statement of Position shall specify the Settling Defendant's position as to whether formal dispute resolution should proceed under Paragraph 68 or Paragraph 69.

b. Within thirty (30) days after receipt of Settling Defendant's Statement of Position, EPA will serve on Settling Defendant its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 68 or Paragraph 69. Within ten (10) days after receipt of EPA's Statement of Position, Settling Defendant may submit a Reply.

c. If there is disagreement between EPA and the Settling Defendant as to whether dispute resolution should proceed under Paragraphs 68 and 69, the parties to the dispute shall follow the procedures set forth in the Paragraph determined by EPA to be applicable. However, if the Settling Defendant ultimately appeals to the Court to resolve the dispute, the Court shall determine which Paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 68 and 69.

68. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendant regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Superfund Division, EPA Region 6, will issue a final administrative decision resolving the dispute based on the administrative record described in Subparagraph 68(a). This decision shall be binding upon the Settling Defendant, subject only to the right to seek judicial review pursuant to Subparagraphs 68(c) and (d).

c. Any administrative decision made by EPA pursuant to Subparagraph 68(b) shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the Settling Defendant with the Court and served on all Parties within ten (10) days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Defendant's motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendant shall have the burden of demonstrating that the decision of the Superfund Division Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 68(a).

69. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendant's Statement of Position submitted pursuant to Paragraph 67, the Director of the Superfund Division, EPA Region 6, will issue a final decision resolving the dispute. The Superfund Division Director's decision shall be binding on the Settling Defendant unless, within ten (10) days of receipt of the decision, the Settling Defendant file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendant's motion.

b. Notwithstanding Paragraph O of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

70. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Defendant under this Consent Decree, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 79. Notwithstanding the stay of

payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the Settling Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

XX. STIPULATED PENALTIES

71. Settling Defendant shall be liable for stipulated penalties in the amounts set forth in Paragraphs 72 and 73 to the United States for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XVIII (Force Majeure). "Compliance" by Settling Defendant shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

72. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Subparagraph (b):

| <u>Penalty Per Violation Per Day</u> | <u>Period of Noncompliance</u> |
|--------------------------------------|--------------------------------|
| \$1,000 | 1st through 14th day |
| \$2,000 | 15th through 30th day |
| \$5,000 | 31st day and beyond |

b. Compliance Milestones.

- (1) Payment of Past Response costs pursuant to Paragraph 54;
- (2) Payment of Future Response costs pursuant to Paragraph 55;
- (3) Commencement of implementation of the activities required under the Remedial Design Work Plan and/or the Remedial Action Work Plan as required by Paragraphs 10 and 11;
- (4) In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, compliance with the requirement set forth in Paragraph 52 to (i) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and (ii) provide notification to EPA; and

(5) Undertake further response actions required by Paragraph 19.

73. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports [or other written documents] pursuant to Paragraphs 10 11, 13, 15, 20, and 29.

| <u>Penalty Per Violation Per Day</u> | <u>Period of Noncompliance</u> |
|--------------------------------------|--------------------------------|
| \$1,000 | 1st through 30th day |
| \$2,000 | 31st through 60th day |
| \$3,000 | 60th day and beyond |

74. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 88 of Section XXI (Covenants Not to Sue by Plaintiff), Settling Defendant shall be liable for a stipulated penalty in the amount of \$250,000.

75. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the thirty-first (31st) day after EPA's receipt of such submission until the date that EPA notifies Settling Defendant of any deficiency; (2) with respect to a decision by the Director of the Superfund Division, EPA Region 6, under Paragraph 68(b) or 69(a) of Section XIX (Dispute Resolution), during the period, if any, beginning on the twenty-first (21st) day after the date that Settling Defendant's reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), during the period, if any, beginning on the thirty-first (31st) day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

76. Following EPA's determination that Settling Defendant failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendant written notification of the same and describe the noncompliance. EPA may send the Settling Defendant a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Defendant of a violation.

77. All penalties accruing under this Section shall be due and payable to the United States within thirty (30) days of the Settling Defendant's receipt from EPA of a demand for payment of the penalties, unless Settling Defendant invoke the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check(s) made payable to:

EPA Superfund - Ruston Foundry Superfund Site (061F)
CERCLIS #: LAD985185107
Mellon Bank
P.O. Box 371099M
Pittsburgh, PA 15251
ATTN: COLLECTION OFFICER FOR SUPERFUND

Respondent shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID Number 061F, the DOJ Case Number 90-11-2-08002, and the name and address of the party making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to:

Associate Director
Technical and Enforcement Branch (6SF-T)
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

78. The payment of penalties shall not alter in any way Settling Defendant's obligation to complete the performance of the Work required under this Consent Decree.

79. Penalties shall continue to accrue as provided in Paragraph 75 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA within fifteen (15) days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendant shall pay all accrued penalties determined by the Court to be owed to EPA within sixty (60) days of receipt of the Court's decision or order, except as provided in Subparagraph (c) below; or

c. If the District Court's decision is appealed by any Party, Settling Defendant shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within sixty (60) days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every sixty (60) days. Within fifteen (15) days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to Settling Defendant to the extent that they prevail.

80. If Settling Defendant fail to pay stipulated penalties when due, the United States may institute proceedings to collect the penalties, as well as interest. Settling Defendant shall

pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 76.

81. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Settling Defendant's violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of the Consent Decree.

82. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XXI. COVENANTS NOT TO SUE BY PLAINTIFF

83. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendant under the terms of the Consent Decree, and except as specifically provided in Paragraphs 84, 85 and 87 of this Section, the United States covenants not to sue or to take administrative action against Settling Defendant pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), relating to the Site. Except with respect to future liability, these covenants not to sue shall take effect upon the receipt by EPA of the payments required by Paragraph 54(a) of Section XVI (Payments for Response Costs). With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 50(b) of Section XIV (Certification of Completion). These covenants not to sue are conditioned upon the satisfactory performance by Settling Defendant of their obligations under this Consent Decree. These covenants not to sue extend only to the Settling Defendant and do not extend to any other person.

84. United States' Pre-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Defendant:

- a. to perform further response actions relating to the Site, or
- b. to reimburse the United States for additional costs of response

if, prior to Certification of Completion of the Remedial Action:

- (1) conditions at the Site, previously unknown to EPA, are discovered, or
- (2) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

85. United States' Post-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Defendant

- a. to perform further response actions relating to the Site, or
- b. to reimburse the United States for additional costs of response

if, subsequent to Certification of Completion of the Remedial Action:

- (1) conditions at the Site, previously unknown to EPA, are discovered, or
- (2) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or this information together with other relevant information indicate that the Remedial Action is not protective of human health or the environment.

86. For purposes of Paragraph 84, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the ESD was signed and set forth in the Record of Decision for the Site, the administrative record supporting the Record of Decision, the ESD, and/or the administrative record supporting the ESD. For purposes of Paragraph 85, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the Record of Decision for the Site, the administrative record supporting the Record of Decision, the ESD, the administrative record supporting the ESD, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

87. General reservations of rights. The United States reserves, and this Consent Decree is without prejudice to, all rights against Settling Defendant with respect to all matters not expressly included within Plaintiff's covenant not to sue. Notwithstanding any other provision of this Consent Decree, the United States reserves all rights against Settling Defendant with respect to:

- a. claims based on a failure by Settling Defendant to meet a requirement of this Consent Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based upon the Settling Defendant's ownership or operation of the Site, or upon the Settling Defendant's transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA, after signature of this Consent Decree by the Settling Defendant;

d. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

e. criminal liability;

f. liability for violations of federal or state law which occur during or after implementation of the Remedial Action; and,

g. liability, prior to Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 13 (Modification of SOW or related work plans);

88. Work Takeover.

(a) In the event EPA determines that Settling Defendant has (i) ceased implementation of any portion of the Work, or (ii) is seriously or repeatedly deficient or late in their performance of the Work, or (iii) is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to Settling Defendant. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notices was issued and will provide Settling Defendant a period of ten (10) Working Days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

(b) If, after expiration of the ten-day notice period specified in Paragraph 88(a), Settling Defendant has not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portions of the Work as EPA deems necessary ("Work Takeover"). EPA shall notify Settling Defendant in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this Paragraph 88(b).

(c) Settling Defendant may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 68, to dispute EPA's implementation of a Work

Takeover under Paragraph 88(b). However, notwithstanding Settling Defendant's invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under Paragraph 88(b) until the earlier of (i) the date that Settling Defendant's remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice or (ii) the date that a final decision is rendered in accordance with Section XIX (Dispute Resolution), Paragraph 68, requiring EPA to terminate such Work Takeover.

(d) After commencement and for the duration of any Work Takeover, EPA shall have immediate access to and benefit of any performance guarantee(s) provided pursuant to Section XIII of this Consent Decree, in accordance with the provisions of Paragraph 48 of that Section. If and to the extent that EPA is unable to secure the resources guaranteed under any such performance guarantee(s) and the Settling Defendant fails to remit a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed, all in accordance with the provisions of Paragraph 48, any unreimbursed costs incurred by EPA in performing Work under the Work Takeover shall be considered Future Response Costs that Settling Defendant shall pay pursuant to Section XVI (Payment of Response Costs).

89. Notwithstanding any other provision of this Consent Decree, the United States retain all authority and reserve all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY SETTLING DEFENDANT

90. Covenant Not to Sue. Subject to the reservations in Paragraph 91, Settling Defendant hereby covenants not to sue and agrees not to assert any claims or causes of action against the United States with respect to the Site and Past and Future Response Costs as defined herein or this Consent Decree, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113, or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site, or

c. any claims arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law.

Except as provided in Paragraph 99 (Waiver of Claim-Splitting Defenses), these covenants not to sue shall not apply in the event that the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 84, 85, and 87(b), (c), (d), and (g), but only to the extent that Settling Defendant's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

91. Settling Defendant reserves, and this Consent Decree is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Defendant's plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA.

92. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

93. Waiver of de Micromis Claims by Settling Defendant. Settling Defendant agrees not to assert any claims and to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution, against any person where the person's liability to Settling Defendant with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if:

a. the materials contributed by such person to the Site containing hazardous substances did not exceed the greater of (i) 0.002% of the total volume of waste at the Site, or (ii) 110 gallons of liquid materials or 200 pounds of solid materials.

b. This waiver shall not apply to any claim or cause of action against any person meeting the above criteria if EPA has determined that the materials contributed to the Site by such person contributed or could contribute significantly to the costs of response at the Site. This waiver also shall not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person if such person asserts a claim or cause of action relating to the Site against such Settling Defendant.

94. Except as provided in Paragraph 93 (Waiver of de Micromis Claims by Settling Defendant), Settling Defendant reserves all claims or causes of action that it may have for all

matters relating to the Site, including for contribution, against (a) owners and operators of the Site, including without limitation Ruston Foundry, Inc., John Mayfield, and Louisiana Pine Products and (b) all other persons and entities potentially liable under 42 U.S.C. § 9607(a) with respect to the Site. Nothing in this Consent Decree diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

95. Except as provided in Paragraph 93 (Waiver of de Micromis Claims by Settling Defendant), nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this decree may have under applicable law. Except as provided in Paragraph 93 (Waiver of de Micromis Claims by Settling Defendant), each of the Parties expressly reserves any and all rights, defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

96. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Defendant is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2) for matters addressed in this Consent Decree. The "matters addressed" in this Consent Decree are Work, Past Response Costs, and Future Response Costs.

97. Settling Defendant agrees that, with respect to any suit or claim for contribution brought by them for matters related to this Consent Decree, it will notify the United States in writing no later than sixty (60) days prior to the initiation of such suit or claim.

98. Settling Defendant also agrees that, with respect to any suit or claim for contribution brought against them for matters related to this Consent Decree, it will notify in writing the United States within ten (10) days of service of the complaint on them. In addition, Settling Defendant shall notify the United States within ten (10) days of service or receipt of any Motion for Summary Judgment and within ten (10) days of receipt of any order from a court setting a case for trial.

99. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claimsplitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that

nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants Not to Sue by Plaintiff).

XXIV. ACCESS TO INFORMATION

100. Settling Defendant shall provide to EPA and the State, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Settling Defendant shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

101. Business Confidential and Privileged Documents.

a. Settling Defendant may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiff under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA and the State, or if EPA has notified Settling Defendant that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Settling Defendant.

b. Settling Defendant may assert that certain documents, records and other information are privileged under the attorney-client privilege, work product, or any other privilege recognized by federal law. If Settling Defendant asserts such a privilege in lieu of providing documents, it shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Settling Defendant. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

102. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

103. Until ten (10) years after the Settling Defendant's receipt of EPA's notification pursuant to Paragraph 51(b) of Section XIV (Certification of Completion of the Work), Settling Defendant shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site. Settling Defendant must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any documents or records (including documents or records in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work, provided, however, that Settling Defendant (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned documents required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

104. At the conclusion of this document retention period, Settling Defendant shall notify the United States at least ninety (90) days prior to the destruction of any such records or documents, and, upon request by the United States, Settling Defendant shall deliver any such records or documents to EPA. Settling Defendant may assert that certain documents, records and other information are privileged under the attorney client privilege or any other privilege recognized by federal law. If Settling Defendant asserts such a privilege, it shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendant. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

105. Settling Defendant hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XXVI. NOTICES AND SUBMISSIONS

106. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their

successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, the State, and the Settling Defendant, respectively.

As to the United States (DOJ & EPA):

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-11-2-08002

and

Director
Superfund Division
United States Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

As to EPA:

Katrina Higgins-Coltrain (6SF-RL)
EPA Project Coordinator
United States Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

As to the Regional Financial Management Officer:

Rey Gomez (6MD-RG)
Regional Financial Management Officer
United States Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

As to the State:

Keith L. Casanova
Administrator
Louisiana Department of Environmental Quality
Remediation Services division
PO Box 4314
Baton Rouge, LA 70821-4314

As to the Settling Defendant:

Mr. Chester Culley
The Kansas City Southern Railway Company
P.O. Box 219335
Kansas City, MO 64121-9335

XXVII. EFFECTIVE DATE

107. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXVIII. RETENTION OF JURISDICTION

108. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Defendant for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof.

XXIX. APPENDICES

109. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the ROD.

"Appendix B" is the ESD.

"Appendix C" is the Statement of Work

"Appendix D" is the description and/or map of the Site.

"Appendix E" is the form of notice referred to in Paragraph 25(b), and

"Appendix F" is the form of the irrevocable letter of credit referred to in Paragraph 45.

XXX. COMMUNITY RELATIONS

110. Settling Defendant shall propose to EPA its participation in the community relations plan to be developed by EPA. EPA will determine the appropriate role for the Settling Defendant under the Plan. Settling Defendant shall also cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA, Settling Defendant shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

XXXI. MODIFICATION

111. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA and the Settling Defendant. All such modifications shall be made in writing.

112. Except as provided in Paragraph 13 (Modification of the SOW or Related Work Plans), no material modifications shall be made to the SOW without written notification to and written approval of the United States, Settling Defendant, and the Court, if such modifications fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(B)(ii). Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document, or material modifications to the SOW that do not fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(B)(ii), may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Defendant.

113. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

114. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendant consents to the entry of this Consent Decree without further notice.

115. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between the Parties.

XXXIII. SIGNATORIES/SERVICE

116. The undersigned representative of Settling Defendant to this Consent Decree and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

117. Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendant in writing that it no longer supports entry of the Consent Decree.

118. Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Defendant hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons. The Parties agree that Settling Defendant need not file an answer to the complaint in this action unless or until the court expressly declines to enter this Consent Decree.

XXXIV. FINAL JUDGMENT

119. This Consent Decree and its appendices constitute the final, complete, and exclusive agreement and understanding among the parties with respect to the settlement embodied in the Consent Decree. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Decree.

120. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States and the Settling Defendant. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS _____ DAY OF _____, 2007.

United States District Judge

The United States respectfully requests that the Court withhold signature until after the United States advises the Court on the results of the public comment period.

'1
262-6618

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. The Kansas City Southern Railway Co. (W.D. La.) relating to the Ruston Foundry Superfund Site.

FOR THE UNITED STATES OF AMERICA

18 October 2007
Date

RONALD J. TENPAS
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

September 20, 2007
Date

MICHAEL T. DONNELLAN
Senior Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Phone: (202) 514-4226
Email: michael.donnellan@usdoj.gov

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. The Kansas City Southern Railway Co. (W.D. La.) relating to the Ruston Foundry Superfund Site.

FOR THE UNITED STATES OF AMERICA

DONALD W. WASHINGTON
United States Attorney
Western District of Louisiana

October 31, 2007 C
Date

KATHERINE VINCENT
Assistant United States Attorney
Western District of Louisiana
800 Lafayette Street, Suite 2200
Lafayette, LA 70501
Phone: (318) 473-7440
Email: Katherine.Vincent@usdoj.gov

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. The Kansas City Southern Railway Co. (W.D. La.) relating to the Ruston Foundry Superfund Site.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

9/21/07
Date

SAMUEL COLEMAN, P.E.,
Director
Superfund Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202

9/17/07
Date

AMY SALINAS
Assistant Regional Counsel
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. The Kansas City Southern Railway Co. (W.D. La.) relating to the Ruston Foundry Superfund Site.

FOR THE KANSAS CITY SOUTHERN RAILWAY CO.

9/14/07

Date

W. JAMES WOCHNER
Senior Vice President and General Counsel
The Kansas City Southern Railway Co.
427 West 12th Street
P.O. Box 219335
Kansas City, MO 64121-9335

Agent Authorized to Accept Service on Behalf of The Kansas City Southern Railway Co.:

Chester (Chet) Culley
General Director, Environmental-Hazmat
The Kansas City Southern Railway Co.
427 West 12th Street
P.O. Box 219335
Kansas City, MO 64121-9335
Telephone: 816/983-1343
Telefax: 816/983-1622
Email: cculley@kcsouthern.com

PAGE
BREAK

APPENDIX A

To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)

Record of Decision Relating to the Ruston Foundry
Superfund Site Signed on June 24, 2002



REGION 6

RECORD OF DECISION SUMMARY

RUSTON FOUNDRY SUPERFUND SITE

RAPIDES PARISH, ALEXANDRIA, LOUISIANA

LAD985185107

JUNE 2002

Record of Decision

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APPENDICES

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| Appendix B: Administrative Record Index |

LIST OF ACRONYMS

| | |
|-------------------|-----------------------------------------------------------------------|
| ACM | Asbestos-containing material |
| ARARs | Applicable or Relevant and Appropriate Requirements |
| bgs | below ground surface |
| CDI | Chronic Daily Intake |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CL | Cleanup Level |
| COC | Chemicals of Concern |
| CPT | Cone Penetrometer Testing |
| cy ³ | cubic yard |
| E & E | Ecology and Environment |
| ELCR | Excess lifetime cancer risk |
| EPA | Environmental Protection Agency |
| EPC | Exposure Point Concentration |
| ESD | Explanation of Significant Difference |
| ESI | Expanded Site Inspection |
| ft | Feet or Foot |
| HI | Hazard Index |
| HQ | Hazard Quotient |
| IEUBK | Integrated Exposure Uptake Biokinetic |
| LA SPLP | Louisiana Synthetic Precipitation Leachate Procedure |
| LDEQ | Louisiana Department of Environmental Quality |
| LDOTD | Louisiana Department of Transportation and Development |
| LDR | Land Disposal Restrictions |
| LPP | Louisiana Pine Products |
| MCL | Maximum contaminant level |
| µg/dl | micrograms per deciliter |
| mg/L | milligrams per liter |
| mg/m ³ | milligrams per meter cube |
| mg/kg | milligrams per kilogram |
| NAAQS | National Ambient Air Quality Standards |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| NPL | National Priorities List |
| OPA | Oil Pollution Act |
| O&M | Operations and Maintenance |
| PAH | Polynuclear Aromatic Hydrocarbons |
| Pb | Lead |
| PCB | Polychlorinated Biphenyls |
| PPE | Personal Protective Equipment |
| PRP | Potentially Responsible Parties |
| RAO | Remedial Action Objective |
| RCRA | Resource Conservation and Recovery Act |
| RECAP | Risk Evaluation/Corrective Action Program |
| RfD | Reference Dose |
| RI/FS | Remedial Investigation/feasibility Study |
| RME | Reasonable Maximum Exposure |
| ROD | Record of Decision |
| RPM | Remedial Project Manager |
| SA | Site Assessment |
| SARA | Superfund Amendments and Reauthorization Act |
| SF | Slope Factor |
| SPLP | Synthetic Precipitation Leachate Procedure |
| TAT | Technical Assistance Team |

| | |
|------|--------------------------------------------|
| TDS | Total Dissolved Solids |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TWA | Time-weighted Average |
| USC | United States Code |
| UST | Underground Storage Tank |
| UCL | Upper Confidence Level |
| XRF | X-Ray Fluorescence |

CONCURRENCE PAGE FOR THE RUSTON FOUNDRY SUPERFUND SITE

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**Record of Decision
Part 1: The Declaration**

DECLARATION FOR THE RECORD OF DECISION

1. SITE NAME AND LOCATION

Ruston Foundry Superfund Site
Alexandria, Rapides Parish, Louisiana
LAD985185107

2. STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Ruston Foundry Superfund Site (Site), in Alexandria, Rapides Parish, Louisiana. The selected remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300 as amended. The Director of the Superfund Division has been delegated the authority to approve this Record of Decision.

This decision was based on the Administrative Record, which has been developed in accordance with Section 113 (k) of CERCLA, 42 U.S.C. § 9613 (k), and which is available for review at the Rapides Parish Public Library in Alexandria, Louisiana, and at the United States Environmental Protection Agency (EPA) Region 6 Records Center in Dallas, Texas. The Administrative Record Index (Appendix C to the Record of Decision (ROD)) identifies each of the items comprising the Administrative Record upon which the selection of the remedial action is based.

The State of Louisiana concurs with the Selected Remedy (Appendix A).

3. ASSESSMENT OF THE SITE

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

4. DESCRIPTION OF THE SELECTED REMEDY

This ROD sets forth the selected remedy at the Ruston Foundry Site. The principal threat waste at the Site will be addressed through the excavation and offsite disposal of contaminated soil and sediment, removal and offsite disposal of asbestos containing material and the underground storage tank, and the excavation, treatment, and offsite disposal of hazardous wastes. The selected remedy is one of EPA's presumptive remedies for the treatment of contamination at sites with metals contamination.

The selected remedy is a comprehensive approach and will address the Site as one operable unit. Due to the previous removal of drums, the remedy addresses all current and potential future risks caused by soil, sediment, and hazardous waste contamination and, to the extent possible, leaching of Site contaminants into the ground water. The remedial measures will prevent exposure to hazardous waste and soil and sediment contaminated with hazardous substances.

The selected remedy will allow for restoration of the Site to beneficial uses. Through the Reuse Grant awarded by the Government in September 2000, the city of Alexandria has developed a future reuse plan. It is anticipated that the selected remedy will provide community revitalization impacts because it will be compatible with Alexandria's Site reuse plan.

The major components of the remedy are:

1. Stabilization - Approximately 1300 cubic yards (yd³) of hazardous waste will be excavated and stabilized. The material will be stabilized until sampling verifies that it no longer exceeds the Toxicity Characteristic Leaching Procedure (TCLP) for lead. After verification, the waste will be disposed offsite at a Resource Conservation and Recovery Act (RCRA) regulated Subtitle D facility.
2. Asbestos Containing Material (ACM) - Materials will be consolidated onsite, contained, and transported offsite to a disposal facility licensed to accept ACM. Methods to control airborne dispersion of asbestos will be implemented during remediation. The estimated total volume of material is 22 yd³.
3. Underground Storage Tank (UST) - The UST, its contents, and the surrounding petroleum wastes will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or Oil Pollution Act (OPA) authority. The surrounding polychlorinated byphenol (PCB) contaminated soils will be removed and disposed offsite in accordance with all federal, state, and local regulations. Total volume of tank contents is estimated at 5,000 gallons. The volume of associated contaminated soil is included in the soil/sediment estimated volume of 15,000 yd³.
4. Building debris and water supply well - The onsite well will be plugged and abandoned in accordance with all federal, state, and local regulations. Portions of the Site will be cleared, where necessary, and the existing buildings and foundations will be demolished, removed and disposed offsite.
5. Soil/sediment - Approximately 15,000 yd³ of lead and antimony contaminated soils and sediment will be excavated and disposed offsite in a RCRA Subtitle D facility.
6. Air Monitoring - During remedial action, efforts will be made to control dust and run-off to limit the amount of materials that may migrate to a potential receptor. Air monitoring will be conducted during times of remediation to ensure that control measures are working to regulate Site emissions.
7. Short-term monitoring - Monitoring of the surface water and ground water during remedial action may be necessary to ensure that runoff control measures are working.

5. STATUTORY DETERMINATIONS

The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

This remedy also satisfies the statutory preference for treatment as a principal element of the remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment). The hazardous wastes will be excavated, stabilized, and disposed offsite.

This remedy will not result in hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for unlimited use and unrestricted exposure. Therefore, a five-year review will not be required for this remedial action.

6. DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this Record of Decision. Additional information can be found in the Administrative Record file for this Site.

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| 8. Key factor(s) that led to selecting the remedy (i.e., describe how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) | 20 |

7. AUTHORIZING SIGNATURES

This ROD documents the selected remedy for soil, sediment, and hazardous wastes at the Ruston Foundry Site. This remedy was selected by EPA with concurrence of the Louisiana Department of Environmental Quality.

U.S. Environmental Protection Agency

By: Myron O. Knudson, P.E.
Director
Superfund Division

Date: 6/24/02

Record of Decision
Part 2: The Decision Summary

8. SITE NAME, LOCATION AND BRIEF DESCRIPTION

The Ruston Foundry Site is an abandoned metal foundry that operated from 1908 until 1985 and is located on the southeast side of Alexandria, Rapides Parish, Louisiana (Figure 1) with geographical coordinates of 31°17'56" north latitude and 92°26'18" west longitude (E&E, 1998). The Site is located in an urban area with mixed development within the city limits of Alexandria. The Site is not currently operational, and there are no onsite workers. The nearest resident is located approximately 80 feet northwest of the Site (ATSDR, 2001), and approximately 6,000 residents are located within a one-mile radius of the Site. There is a recreational park located approximately 1/4-mile southeast of the Site, and schools identified within one mile of the Site include Peabody Elementary, Peabody Magnet, Jones Street Junior High, Bolton High, South Alexandria Sixth Grade School, and Alma Redwine Primary School.

The Ruston Foundry property is 4.98 acres and the Louisiana Pine Products (LPP) property is 1.62 acres for a total Site acreage of 6.6 acres (Figure 2). The LPP property is part of the Site due to Ruston conducting historical operations on that property. The Ruston Foundry property consists primarily of dilapidated structures and building foundations overgrown with thick brush, and the LPP property is a flat grassy area. The Site is bordered by a series of abandoned railroad tracks to the west. Chatlin Lake Canal borders the Ruston property to the northeast and east, and Mill Street Ditch borders the Ruston property to the south-southeast and LPP to the north. Residential property is located to the north and east of the Ruston Foundry property across the canal and to the east and south of LPP. Historical and active industrialized areas lie further west and north of the Site.

The Site remedial action is expected to be fund-lead with the Environmental Protection Agency (EPA) as the lead agency and the Louisiana Department of Environmental Quality (LDEQ) as the support agency. The National Superfund Electronic Database Identification Number for the Site is LAD985185107.

A more complete description of the Site can be found in Sections 1 and 3 of the Remedial Investigation Report (CH2M Hill, February 2002a).

9. SITE HISTORY AND ENFORCEMENT ACTIVITIES

1. History and Site Activities

Ruston Foundry operated from 1908 until 1985. From the beginning of operation until October 1983, it was operated under the name Ruston Foundry and Machine Shops, Ltd. In 1983, the facility was reincorporated and began operating under the name Ruston Foundry and Machine Shops, Inc. In November 1990, the Ruston Foundry and Machine Shops, Inc. corporation charter was revoked by the Louisiana Secretary of State for failure to file its corporate annual report (EPA, 1998).

Foundry operations resulted in metals contaminated waste which was dispersed throughout the property as fill material. As a result of this disposal activity, foundry-derived process wastes (slag, foundry sand piles, metal scrap, and castings) cover most of the Site and have contaminated the soil. Contaminants are found in the canal sediments and surface water due to runoff of Site materials. Source materials in the form of drums of sludge were removed from the

Site in 1999, during the time-critical removal action.

A more complete description of the Site can be found in the RI Report (CH2M Hill, February 2002a).

2. History of Federal and State Investigations and Removal and Remedial Actions

LDEQ - The LDEQ Inactive and Abandoned Site Division conducted a Site investigation in June 1990, which included drum and surface soil sampling. Based on these sample results, LDEQ referred the Site to EPA as a candidate for an emergency response action.

Site Assessments - 1990 Site Assessment (E&E, 1991) and 1994 Site Assessment (E&E, 1994) - In 1990, a Site Assessment (SA) was completed to determine sampling strategies for the Site. Sampling activities included onsite surface soil, drum contents samples, and air samples.

In February 1994, a second SA was completed to determine the type and volume of materials to be addressed by a removal action and evaluate disposal options for the Site.

Expanded Site Inspection - (E&E, 1998) - Based on the results of the SA activities, EPA initiated an evaluation of the Site for potential inclusion on the National Priorities List (NPL). In March 1998, an Expanded Site Inspection (ESI) was conducted to further characterize the Site and assess whether offsite target receptors had been impacted by Site contaminants (E&E, 1998).

Removal Assessment - Offsite (E&E, 1999a) - In 1999, the EPA conducted a removal assessment of the residential neighborhood bordering the Site. This assessment also included removing drums, repairing the fence, air sampling, and placing signs along the fence (E&E, 1999a).

National Priorities List - The Site was proposed to the NPL on January 19, 1999 and was finalized on May 10, 1999.

Time-Critical Removal Action - A removal assessment was performed from June 28 to July 3, 1999, to prepare onsite drums for removal. Staged drums were transported and disposed offsite on August 11, 1999 (E&E, 1999b).

Remedial Investigation/Feasibility Study - The EPA issued a work assignment to CH2M Hill in June 1999 to perform a RI/FS. The RI/FS information is described in more detail in the RI report (CH2M Hill, February 2002a) and the FS report (CH2M Hill, February 2002b).

A more complete description of previous Site investigations can be found in Section 1 the RI Report (CH2M Hill, February 2002a).

3. History of CERCLA Enforcement Activities

Based on the investigation of Site historical information, three potentially responsible parties were identified: Ruston Foundry and Machine Shops, Inc., Louisiana Pine Products, and Kansas City Southern Railroad. Information request letters and general notice letters were issued requesting specific Site information and notifying the parties of potential liability for Site response activity. Based on the responses to these letters, the EPA issued special notice waivers because the Agency determined that negotiations would not move the project forward in a timely manner. Based on this decision, the Site RI/FS was completed as an EPA fund-lead project.

10. COMMUNITY PARTICIPATION

Throughout the Site's history, the community has been interested and involved with Site activity. The EPA has kept the community and other interested parties updated on Site activities through informational meetings, fact sheets, and public meetings. Below is a brief summary of public outreach efforts.

- **NPL Listing:** On January 19, 1999, EPA released a Site Update notifying the community that EPA and LDEQ were planning to propose the Site on the NPL in order to address Site contamination. This update also requested public comments on the NPL proposed package. The Site was placed on the NPL in May 1999, and a Site Update notifying the public was issued.
- **Community Relations Plan:** The EPA released a community relations plan in November 1998 that outlined a program to address community concerns and keep citizens informed about and involved in the remedial activities.
- **EPA Open Houses and Status Fact Sheets:** The EPA and LDEQ have held several open houses and mailed out fact sheets to discuss Site activities related to the removal assessment and RI/FS: 3/22/99, 3/28/00, 9/25/00, 10/24/00, 4/9/01, 10/09/01, 03/28/02.
- **Reuse Meetings:** The EPA has participated in two meetings with the City of Alexandria regarding Site reuse: 2/12-13/01, 02/26-27/01.
- **Proposed Plan Fact Sheet and Public Meeting:** The Proposed Plan was signed on March 18, 2002 and presented to the community on March 28, 2002. The formal proposed plan Public Meeting was held on April 18, 2002, and the comment period lasted from April 1, 2002 through April 30, 2002.

11. SCOPE AND ROLE OF RESPONSE ACTION

Drum waste from the Site was previously addressed during a removal action; therefore, the selected remedial action presents the final response action that will address Site contaminants that pose a current or future health risk and address the Site as one operable unit. Development of the response action was based on the use of the presumptive remedy approach for metals in soil. It was determined appropriate to apply the presumptive remedy for metals in soil based on the soil and contaminant characteristics found at the Site and guidance provided in the directive, Presumptive Remedies for Metals-in-Soil Sites (EPA, 1999). Risk reduction based on a future redevelopment recreational/commercial scenario will be achieved through the following:

- The ACM and the UST, its contents, and surrounding petroleum and PCB contaminated soils will be removed and disposed offsite, thereby removing this principal threat waste.
- The former onsite water supply well will be plugged and abandoned while the building debris, concrete slabs, sump, and trash will be removed and disposed offsite.
- The lead and antimony contaminated soil will be excavated and disposed offsite at a RCRA regulated Subtitle D facility. This will remove these principal threat wastes.
- Hazardous waste exceeding TCLP lead will be stabilized prior to offsite disposal. Once the material has been stabilized, it will be sampled to verify that it no longer exceeds TCLP for lead, and will be disposed offsite at a RCRA regulated Subtitle D facility. This will remove the principal threat waste and satisfy the statutory preference for treatment.
- The excavated areas will be backfilled with clean fill and compacted. Topsoil will be placed over the disturbed area and a natural vegetative cover will be established.

12. SITE CHARACTERISTICS

1. Physical Site Characteristics

The 6.6 acre Site is situated at the confluence of the Chatlin Lake Canal and the Mill Street Ditch, which both receive surface runoff from the Site. Above its confluence with Mill Street Ditch, the Chatlin Lake Canal receives overflow through a control structure from Bayou Rapids and stormwater drainage from downtown Alexandria. The drainage area upstream of the canal is estimated to be 20 acres, in addition to the overflow from Bayou Rapids. The Mill Street Ditch provides drainage from an area west of the Site, including south Alexandria. Both Chatlin Lake Canal and the Mill Street Ditch demonstrate flow regimes characteristic of urban streams designed for flood control. Drainage from the canal flows to the southeast to Bayou du Lac, approximately 25 miles downstream, then to Lake Pearl, Bayou des Glaisses, and ultimately, the Atchafalaya River. The Site elevation is approximately 75 feet above mean sea level, and is located within the 100-year flood plain (E&E, 1999a).

Surface material (0-1 foot (ft)) at the Ruston Foundry Site consists of foundry waste material, fat clay, and silt (Figure 3). The foundry sand is black in color and is a poorly-graded, fine to medium grained sand that may include glass shards and chunks of porous (pumice-type) material. Oxidized pieces of coal are present near the onsite railroad spurs and the foundry building. Slag piles are blocky in appearance, generally have a lustrous surface, and are very large in size at some Site locations. Along Mill Street Ditch and under the concrete slab, large quantities of oxidized metal filings are present. At several areas on the Site, fire brick has been identified that generally contains metallized surfaces (shiny metallic luster coating the fire bricks).

Beneath the foundry waste material generally lies a fat clay with a few lenses of lean clay and silty clay. Three silty clay layers were identified. The first silty clay layer is approximately 5 to 10 ft below ground surface (bgs) and dry. The second silty clay layer at approximately 15 to 20 ft bgs is moist but did not produce sufficient water for sample collection. The third silty clay layer (25 to 30 ft bgs) has a higher sand content, appears to be very discontinuous, grades laterally into sand in places, and produces adequate supplies of water for sampling purposes. It also appears that some hydraulic connection between layers two and three is possible in the area of the confluence for the Chatlin Lake Canal and Mill Street Ditch. The clays in these zones are considered to be part of the upper confining system of the Red River Alluvial Aquifer.

Additional information on Site geology and hydrology can be found in Section 3 of the RI Report (CH2M Hill, February 2002a).

2. Site Contamination

Sampling for the remedial investigation (RI) was conducted from September to November 2001 and included surface soil grid sampling, sampling of soil/sediment on transects across the canals, sampling of waste piles, air monitoring, sampling of surface soil hot spots, sampling of surface water and sediment in the canals, stratigraphic profiling with cone penetrometer testing (CPT), subsurface soil grid sampling with direct-push and conventional drilling, monitor well installation, ground water sampling, and aquifer testing.

Based on Site sampling, a conceptual Site model was developed (Figure 4). The apparent contaminant sources include foundry slag piles, building foundation areas, buried foundry materials, a concrete sump, ACM, and a UST. A layer of foundry-derived waste material, including slag, foundry sand, and/or metal shavings, covers most of the ground surface. When

present, this material ranges in thickness from about 1 inch to about 5 ft in the southwest corner of the main Site area. The majority of surface soil samples contained visible foundry waste materials and, as a result, surface soil samples tended to demonstrate the highest concentrations of Site-related chemicals of concern (COC).

By evaluating the fate and transport of source materials, environmental media that are impacted or may be impacted by Site-related chemicals were identified. Several media were identified as being potentially impacted by the source materials: ground water, surface water, sediment, air, and soil. The identified contaminated media are surface soil and sediment that contain the COC lead and antimony, and the exposure routes of concern are direct contact and ingestion. Children are most sensitive and vulnerable to the effects of lead. Exposure to large quantities of lead can result in blood anemia, kidney damage, colic, muscle weakness, brain damage, slowed mental and physical growth, prematurely born babies, and slow mental development. Antimony is currently identified as a noncarcinogen. Long time exposure to antimony in the air can irritate your eyes, skin, and lungs. Long time inhalation of antimony can cause lung problems, heart problems, stomach pain, diarrhea, vomiting, and stomach ulcers. Ingestion also can cause diarrhea, joint and/or muscle pain, vomiting, anemia, and heart problems.

Lead and antimony are hazardous substances as defined in Section 101(14) of CERCLA 42 U.S.C. § 9601(14), and further listed at 40 C.F.R. § 302.4. The concentrations for lead ranged from 12.8 mg/kg to 38,200 mg/kg and antimony ranged from 0.107 mg/kg to 18,000 mg/kg. The estimated volume of lead and antimony contaminated soil and sediment is 10,000 yd³ of the total 15,000 yd³. In addition to the soil/sediment waste, there is an estimated 1,300 yd³ of waste identified as hazardous waste because it exceeded TCLP for lead.

Louisiana state regulations specify that soil concentrations of contaminants be protective of ground water. The Synthetic Precipitation Leachate Procedure (SPLP) was conducted on surface and subsurface soil samples. These results were compared to Risk Evaluation/Corrective Action Program (RECAP) screening criteria for soil concentrations protective of ground water. Only surface soils (0-1 ft) exceeded LA SPLP for beryllium, lead, and antimony. Beryllium is not a concern, however, because it was not detected above background. The estimated volume of soil that exceeded SPLP is 5,000 yd³ of the total 15,000 yd³. Therefore, the potential release sources are the onsite contaminated soil, slag piles, and bank soil piles.

The Site is situated in a mixed zoning (industrial and residential) area of Alexandria. The Year 2000 census data for the Alexandria area indicates 46,342 people live in the City of Alexandria and an additional 13,829 people live in Pineville City (less than two miles north of the Site). Various populations of interest were identified near the Site (within a 0.5-mile radius): residents to the east and south of the Site, adjacent to, but across, the Mill Street Ditch and Chatlin Lake Canal; two schools (Peabody Magnet High School and Peabody Sixth Grade Center) located approximately 0.4 miles from the Site; and, nine churches.

The contaminated soil and sediment as well as the ACM, UST liquid, and wastes exceeding lead TCLP are identified as principal threat wastes. The UST contents will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or OPA authority. These principal threat wastes are either highly toxic, liquid, or hazardous source materials that would pose a significant risk to young children. Redevelopment of the Site as a recreational/commercial environment would result in an unacceptable risk to children through direct exposure with Site soils unless remediated.

13. CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

1. Current and Future Land Use

The Ruston Foundry Site is located in an urban area with mixed development within the city limits of Alexandria. The Site is not currently operational, and there are no onsite workers. Residential neighborhoods are located to the north, east, and south of the Site. The nearest resident is located approximately 80 feet northwest of the Site and approximately 6,000 people live within a one-mile radius of the Site. There is a recreational park located approximately 1/4-mile southeast of the Site and several schools identified within one mile. The current Site use is abandoned industrial, and youth trespassers have been seen.

According to the zoning board, the Site is zoned for industrial usage. The Site is currently located in an area with projected low growth, and future residential use of the Site is unlikely. The city of Alexandria was awarded a Reuse Grant in September 2000, from the Government for the purpose of developing a future reuse plan for the Ruston Foundry Site. Although the Site is currently industrial, Site reuse plans indicate that there will be a combination of recreational/commercial activity across the Site. Therefore, the reasonably anticipated future land use for the Site is recreational, which in this case, is more conservative due to the exposure of young children during playtime.

2. Current and Future Ground Water and Surface Water Use

The Site monitor wells are screened within the silty clays of the upper confining system of the Red River Alluvial Aquifer. Concentrations present in samples taken from the permanent ground water monitoring wells exceeded the MCL or RECAP screening criteria for one constituent, bis(2-ethylhexyl)phthalate, which is a common plasticiser used in well construction material, and is most likely associated with Site monitoring well installation. Currently, public water supply is provided to the Site vicinity and is expected to be provided onsite in the future. According to the water well inventory from the Louisiana Department of Transportation and Development (January 2001), there are no registered drinking water wells obtaining water from the Red River alluvial aquifer (<120 feet) within two miles of the Site, and the city of Alexandria is not planning to use the ground water in the area for its future redevelopment project. Although the ground water does not exceed MCLs or RECAP (except for one constituent), future use of this aquifer is not anticipated. The LDEQ RECAP ground water classification for this aquifer is determined to be 2B - an aquifer that could potentially supply drinking water to a domestic water supply well.

Chatlin Lake Canal and Mill Street Ditch are urban streams designed for area flood control. These streams collect storm water drainage from the city and surrounding areas, and Chatlin Lake Canal also receives overflow from Bayou Rapides. Engineering plans developed by the city for future use of these canals will redesign and reconstruct these canals to better accommodate drainage waters by placing a concrete lining along the bottom and sides of the canals.

14. SUMMARY OF SITE RISKS

A baseline risk assessment was completed in March 2002, for human health and in October 2001 for ecological. The assessments estimate the probability and magnitude of potential adverse human health and environmental effects from exposure to contaminants associated with the Site assuming no remedial action was taken. They provide the basis for taking action and identified the contaminants and exposure pathways that need to be addressed by the remedial action.

This section focuses on the information that is driving the need for the specific response action

described in the ROD. It does not summarize the entire baseline risk assessment, however it does summarize the primary COC, or "risk drivers", identified in the risk assessment. In addition, the summary of the exposure assessment also focuses on those exposure pathways and scenarios driving action at the Site, rather than all of the exposure pathways and scenarios evaluated for the entire Site. Refer to the Conceptual Site Model throughout this section (Figure 4).

1. Human Health Risk Assessment

a. Identification of Chemicals of Concern

The identified COC for current trespasser and future recreator risk scenarios are antimony and lead. Table 1 presents exposure point concentrations (EPC: *i.e.*, the concentration that will be used to estimate the exposure and risk from each COC in the soil), the range of concentrations detected for each COC, the frequency of detection (*i.e.*, the number of times the chemical was detected in the samples collected at the Site), and how the EPC was derived. The tables indicate that antimony and lead were detected in all samples that were collected for risk evaluation. The EPCs for soil and slag were derived using the 95% upper confidence level (UCL) on the arithmetic mean and the EPCs for the hot spot were the maximum concentration detected.

i. Lead

Because lead (Pb) does not have a nationally approved reference dose (RfD), slope factor (SF), or other accepted toxicological factor which can be used to assess risk, standard risk assessment methods cannot be used to evaluate the health risks associated with Pb contamination.

Therefore, the Integrated Exposure Uptake Biokinetic (IEUBK) model for Pb in children was used to evaluate the risks posed to young children as a result of the Pb contamination at this Site. The IEUBK model was run using Site-specific data to predict a Pb soil level that will be protective of children and other adults. Site-specific soil Pb concentrations, as detailed in the summary table for the COC in this ROD, were used in place of model default values.

The input menus of the IEUBK model do not provide enough flexibility for scenarios in which children have multiple lead exposures to different soil sources. For the Ruston Foundry Site, it is expected that children may be exposed to lead in soil around their houses and to lead in soil at the Ruston Foundry Site. To overcome the lack of flexibility in the IEUBK model and to accept input values for different soil lead sources, separate calculations were made to derive the appropriate time-weighted average (TWA) soil concentrations for the model. These calculations were made prior to entering values in the model and are based on the assumptions presented in Section 2: Exposure Assessment.

b. Exposure Assessment

The current Site use is abandoned industrial, and youth trespassers were identified as potential receptors. The reasonable future onsite land use is recreational. Future residential use of the Site is unlikely, and the City of Alexandria plans to develop the Site into a park and recreational area. Based on the future recreational scenario, adult and child recreators were identified as potential receptors.

Exposure pathways for fish and ground water were not quantitatively addressed because they were considered incomplete. Occasionally in spring and fall, overflow water is released from upstream, and fish are released to the canal. It is unlikely that these fish are impacted by Site-related chemicals due to the short duration of their contact with potentially impacted surface

water or sediment. Therefore, exposure through ingestion of fish is considered an incomplete pathway (CH2M Hill, 2002c). The Site monitor wells are screened within the silty clays of the upper confining system of the Red River Alluvial Aquifer, and concentrations indicate that the MCLs or RECAP criteria have not been exceeded. No registered drinking water wells obtaining water from the Red River alluvial aquifer (<120 ft) have been identified within two miles of the Site, and the city of Alexandria is not planning to use the ground water in the area for its future redevelopment project. Therefore, the ground water exposure pathway is considered incomplete, because no ground water exposure points were identified and public water supply is provided to the Site vicinity and will be used onsite in the future.

Of the complete exposure pathways quantified in the risk assessment, those listed below are driving remedial activities. Exposure parameters are presented in Table 2.

- Trespasser (Current) – ingestion/dermal contact of Site-related chemicals in hot spots.
- Adult Recreator (Future) – ingestion/dermal of Site-related chemicals in hot spots.
- Child Recreator (Future) - ingestion/dermal of Site-related chemicals in soil/canal transects, hot spots, and slag piles.

i. IEUBK

Below is a summary of assumptions used to calculate TWA soil lead concentrations (Table 3).

- Exposure Frequency: Because the frequency of days per week a child from the neighborhood could visit the Site is unknown, a range of values of one day/week, 3 days/week and 5 days/week was assumed.
- Time Spent onsite: The IEUBK model limits the time a child spends playing outdoors to four hours. Since the time spent at the Site will vary between children, a range of values was selected to reflect different types of activities: it was assumed that 10, 25, and 50 percent of the time spent outdoors would be spent at the Site.
- Ingestion rate: The default ingestion rates used in the IEUBK model may not reflect ingestion rates associated with active contact with dirt. A child playing in a park is expected to be in direct intensive contact with soil. As such, incremental increases over the IEUBK model default ingestion rates were assumed. Incremental increases in ingestion rates over the model default totals for each age group were divided into low, medium, and high. Low was defined as an incremental increase of 25% over the model default totals for each age group, medium was defined as an incremental increase of 45% over the model default totals for each age group, and high was defined as an incremental increase of .2 g/day which is used in Superfund assessments as a high average daily soil ingestion rate.

The TWA soil lead concentration was further evaluated using Monte Carlo analysis. This probabilistic analysis of the TWA soil lead concentration was utilized to evaluate the uncertainty in exposure frequency and time spent outdoors and the variability in the soil data collected from the Site and from the residential yards. The distribution of the exposure frequency and time spent onsite were assumed to be uniform covering the full range of one day per week to seven days per week for the exposure frequency and from .4 hours to 4 hours for time spent outdoors onsite. The distribution of the soil lead data of the seventeen residences was determined and used in the evaluation.

c. Toxicity Assessment

Toxicity assessment is accomplished in two steps: hazard identification and dose-response assessment. Hazard identification is the process of determining whether exposure to a chemical is associated with a particular adverse health effect. Hazard identification involves characterizing the nature and strength of the evidence of causation.

The dose-response assessment is the process of predicting a relationship between the dose received and the incidence of adverse health effects in the exposed population. From this quantitative dose-response relationship, toxicity values are derived that can be used to estimate the potential for adverse effects as a function of potential human exposure to the chemical.

Two general groups categorize chemicals depending on the types of effects on human health: carcinogens and non-carcinogens. Neither antimony nor lead were identified as carcinogens, therefore cancer toxicity data are not presented. Table 4 summarizes the non-cancer toxicity data which is relevant to lead and antimony.

d. Risk Characterization

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk (ELCR) is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where: risk = a unitless probability (e.g., 2×10^{-5}) of an individual developing cancer
CDI = chronic daily intake averaged over 70 years (mg/kg-day)
SF = slope factor, expressed as (mg/kg-day)⁻¹.

These risks are probabilities that usually are expressed in scientific notation (e.g., 1×10^{-6}). An ELCR of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or exposure to too much sun. The chance of an individual developing cancer from all other causes has been estimated to be as high as one in three. EPA's generally acceptable risk range for site-related exposures is 10^{-4} to 10^{-6} . The risk assessment did not identify an ELCR that exceeded the acceptable risk range.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period with a reference dose (RfD) derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient (HQ). A HQ < 1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that toxic noncarcinogenic effects from that chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) or that act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. A HI < 1 indicates that, based on the sum of all HQ from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely. A HI > 1 indicates that site-related exposures may present a risk to human health.

The HQ is calculated as follows:

$$\text{Non-cancer HQ} = \text{CDI/RfD}$$

where:

CDI = Chronic daily intake

RfD = reference dose.

CDI and RfD are expressed in the same units and represent the same exposure period (i.e., chronic, subchronic, or short-term). The risk assessment identified a $\text{HI} > 1$ due to the effects of antimony on the circulatory system.

i. IEUBK

Results of the IEUBK model are presented in Tables 5-9. Separate calculations were made for each of the 17 residences situated adjacent to the Site in order to identify the TWA soil lead concentration for each residence (Table 5). As expected, the TWA soil lead concentration increases with an increase in the type of activity except when the yard soil lead concentration is higher than the Site average soil lead concentration (as occurred with RES09). In that case, the TWA soil lead concentration for RES09 decreases with increase of type of activity from low to high.

The default ingestion rates were used to calculate the predicted probability of a 5% chance of exceeding a blood lead level of 10 micrograms per deciliter ($\mu\text{g}/\text{dl}$) for each of the 17 residences bordering the Site (Table 6). The ingestion rates were then increased incrementally from low to high activity, and the impacts on exceeding the criteria are reported in Tables 7, 8, and 9. The following results were observed:

- **Default Ingestion Rate (Table 6)**
Low Activity – 5 residences exceed criteria
Medium Activity – 5 residences exceed criteria
High Activity – All residences exceed criteria
- **Additional Low Ingestion Rate (Table 7)**
Low Activity – 5 residences exceed criteria
Medium Activity – 8 residences exceed criteria
High Activity – All residences exceed criteria
- **Additional Medium Ingestion Rate (Table 8)**
Low Activity – 5 residences exceed criteria
Medium Activity – 15 residences exceed criteria
High Activity – All residences exceed criteria
- **Additional High Ingestion Rate (Table 9)**
Low Activity – 14 residences exceed criteria
Medium Activity – All residences exceed criteria
High Activity – All residences exceed criteria

e. Uncertainty

Some level of uncertainty is introduced into the risk characterization process every time an assumption is made. In regulatory risk assessment, the methodology dictates that assumptions err on the side of overestimating potential exposure and risk. The effect of using numerous assumptions that each overestimate potential exposure and risk is to exaggerate estimates of

potential risk.

The large number of assumptions made in the risk characterization could potentially introduce a great deal of uncertainty. Any one individual's potential exposure and subsequent potential risk are influenced by their individual exposure and toxicity parameters and will vary on a case-by-case basis. While it is theoretically possible that this may lead to underestimates of potential risk, the use of numerous upper-bound, toxicity, and health protective assumptions will most likely lead to an overestimate of potential risks associated with the site.

2. Ecological Risk Assessment

The habitats located on Ruston Foundry currently exist due to the lack of activity onsite since the foundry was abandoned. The Site will be made "ready for reuse", thereby altering the habitat in the future such that it will no longer support the complete exposure pathways to ecological receptors. The City of Alexandria wants to convert the abandoned Site to a recreational/commercial reuse complex. After readying the Site for reuse, the current habitat will no longer exist.

The purpose of the surrounding canals is flood control management for the city of Alexandria and Bayou Rapides by accommodating drainage waters from the city and surrounding areas as well as overflow from the Bayou. The canals will be redesigned and reconstructed in the future to better accommodate these drainage waters. Engineering plans developed by the city will result in concrete lining to be placed along the bottom and sides of the canals. The placement of the concrete lining will interrupt the exposure pathway to the aquatic ecosystem.

Based on plans for future reuse and redevelopment of the entire Site, habitat located onsite and along the canals will no longer exist to sustain the ecological wildlife currently present. Therefore, remedial clean up levels will not be required for ecological receptors.

3. Basis of Action

The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. The risk assessment identified exposures that exceeded the criteria of $HI < 1$ and the 5% chance of exceeding 10 $\mu\text{g/dl}$ blood lead level; therefore, unrestricted use of the Site will present an unacceptable risk to children and adults unless remediated. Lead risks are summarized in Tables 6 through 9 and non-carcinogenic risks are summarized in Tables 10 through 12.

15. REMEDIAL ACTION OBJECTIVES

| Media of Interest | Remedial Action Objective |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Soil and Sediment | <p>RAO No. 1 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with surface soils and waste piles containing lead at concentrations that would result in a greater than 5% chance that a child's blood lead value would exceed 10 µg/dl.</p> <p>RAO No. 2 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with surface soils and waste piles containing antimony at concentrations which have a HI>1.</p> <p>RAO No. 3 - Prevent leaching and migration of lead from surface soils and waste piles into the ground water at concentrations exceeding 0.015 mg/l.</p> <p>RAO No. 4 - Prevent leaching and migration of antimony from surface soils and waste piles into the ground water at concentrations exceeding 0.006 mg/l.</p> |
| Other Media | <p>RAO No. 5 - Prevent direct human contact with ACM at concentrations greater than 1% by weight.</p> <p>RAO No. 6 - Prevent direct contact with the UST, its contents, and surrounding contaminated soils.</p> <p>RAO No. 7 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with slag pile material with TCLP lead concentrations greater than 5 mg/l and handle as hazardous waste in accordance with all applicable federal, state, and local regulations.</p> <p>RAO No. 8 - Prevent migration of contaminants to deeper soils and ground water through the former onsite water supply well and from the existing buildings, slabs, sump, and trash.</p> |

ACM= asbestos containing material

HI = hazard index

µg/dl = micrograms per deciliter

UST = underground storage tank

mg/l = milligrams per liter

RAO = remedial action objective

TCLP = Toxicity Characteristic Leaching Procedure % = percent

1. Cleanup Level (CL)

In order to be protective for Site reuse under a recreational/commercial scenario, RAOs were established. Because there are no Federal or State cleanup standards for soil contamination, the EPA established the RAO CLs based on the baseline risk assessment. The CLs selected for this proposed action will reduce the excess noncancer risk associated with exposure to contaminated wastes, the excess risk of exceeding 10 µg/dl blood lead level, and the potential for migration of contaminants into the ground water. This will be achieved by:

- reducing the concentrations of the soil contaminated with antimony to 150 mg/kg and/or less than the LA SPLP;
- reducing the concentrations of the soil contaminated with lead to 500 mg/kg and/or less than the LA SPLP;
- removing ACM and disposing of waste offsite;
- removing the UST, its contents and surrounding PCB soils and disposing of waste offsite;
- abandoning the onsite well and disposing of building debris offsite; and,
- stabilization of hazardous waste and disposing of the waste offsite.

16. DEVELOPMENT AND SCREENING OF ALTERNATIVES

Presumptive remedies were developed by EPA to streamline the selection of cleanup alternatives for certain categories of sites. This approach narrows the consideration of cleanup alternatives to treatment technologies or remediation approaches that have a proven track record in the

Superfund program. The EPA has determined that it is appropriate to apply the presumptive remedy for metals in soil based on the soil and contaminant characteristics found at the Site and guidance provided in the directive, Presumptive Remedies for Metals-in-Soil Sites (EPA 540-F-98-054, OSWER-9355.0-72FS, September 1999).

Following the Presumptive Remedy for Metals-In-Soils, the EPA has a goal of resource conservation, thereby making reclamation/recovery the preferred treatment technology for metals-in-soil sites. This approach was determined to be inappropriate for the Site. Slag waste is the primary contaminated media/matrix encountered throughout the Site, and reclamation/recovery is generally not effective for treatment of slag waste. The concentration of metals in the slag is too low to warrant reclamation and recovery and the physical and chemical nature of the slag material that binds the metals would make reclamation or recovery of metal from the waste physically and economically impractical. Therefore, the second preferred treatment technology alternative of immobilization (solidification/stabilization) was used.

In addition to the no action alternative, required by the NCP for inclusion as a baseline of Site conditions for comparison, EPA evaluated presumptive remedies and an excavation and offsite disposal alternative.

| SUMMARY OF REMEDIAL ALTERNATIVES | | |
|----------------------------------|----------------------------------------|------------------------------------|
| Medium | RI/FS Remedial Alternative Designation | Description |
| Soil | 1 | No action |
| | 2 | Containment |
| | 3 | Stabilization and Capping |
| | 4 | Stabilization and Offsite Disposal |
| | 5 | Excavation and Offsite Disposal |

17. DESCRIPTION OF ALTERNATIVES

1. Common Elements of all alternatives except for Remedial Alternative 1 - No Action.

- The areas to be remediated are those which exceed the antimony CL of 150 mg/kg, the lead CL of 500 mg/kg, and/or the LA SPLP lead and antimony CLs. This equates to a total of approximately 15,000 yd³ of contaminated soil/sediment that will be addressed by each remedy option.
- The ACM will be consolidated onsite, contained, and transported offsite to a disposal facility licensed to accept ACM. Methods to control airborne dispersion of asbestos will be implemented during remediation. The estimated total volume of material is 22 yd³.
- The UST, its contents, and the surrounding petroleum wastes will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or OPA authority. The surrounding PCB contaminated soils will be removed and disposed offsite in accordance with all federal, state, and local regulations. Total volume of tank contents is estimated at 5,000 gallons. The volume of associated contaminated soil is included in the soil/sediment estimated volume of 15,000 yd³.
- The dilapidated buildings and foundations will be removed and disposed offsite. The estimated volume is 300 yd³.

- The former onsite water supply well will be plugged and abandoned in accordance with all federal, state, and local regulations.
- An estimated volume of 1300 yd³ of hazardous waste will be remediated. This waste exceeds the TCLP lead standard and is considered hazardous waste as defined by RCRA. It is, therefore, subject to the RCRA land disposal restrictions (LDRs) if the waste is excavated and treated or removed from the area of contamination. All remedies involving such activities will comply with the LDR (63 FR 28555; May 26, 1998) and will meet 90% removal efficiency or ten times the universal treatment standard for that contaminant in the material prior to land disposal in a RCRA-compliant landfill.
- During remedial action, efforts will be made to control dust and run-off to limit the amount of materials that may migrate to a potential receptor. Air monitoring and short-term monitoring of the surface water and ground water will be conducted during times of remediation to ensure that control measures are working to regulate Site emissions.

2. Summary of Alternatives

Remedial Alternative 1: NO ACTION

Estimated Capital Cost: \$0
 Estimated Annual O&M Cost: \$46,583
 Estimated Present Worth Cost: \$46,583
 Estimated Construction Timeframe: None

Regulations governing the Superfund program generally require that the "no action" alternative be evaluated to establish a baseline for comparison. Under this alternative, the EPA would take no action at the Site to prevent exposure to the soil or possible leaching of contaminants into the ground water. Hazardous substances will continue to be or threaten to be released into the environment, if no action is taken.

By leaving the waste onsite, the EPA will be required to conduct remedy reviews at least every five years.

Remedial Alternative 2: CONTAINMENT

Estimated Capital Cost: \$3,465,951
 Estimated Annual O&M Cost: \$731,577
 Estimated Present Worth Cost: \$4,197,528
 Estimated Construction Timeframe: 9 to 12 months
 Estimated Time to Achieve RAOs: 9 to 12 months

The waste material (contaminated soil, hazardous waste foundry material, and building debris) will be excavated, stockpiled, and temporarily stored onsite. Confirmation sampling will be required to ensure that all wastes have been removed and CLs have been met.

A containment cell will be designed and constructed onsite with sufficient volume to contain 15,000 yd³ of lead and antimony contaminated surface soil and soil exceeding LA SPLP, 1,300 yd³ of hazardous waste; and 300 yd³ building debris. The cell will be constructed with impermeable bottoms and sides to prevent the migration of contaminants out of the cell, and an impermeable cap will be constructed over the waste consisting of compacted clay and/or an impermeable membrane liner to prevent the infiltration of water into the cell. A leachate collection system and/or a vapor recovery system may also be necessary as part of the containment cell design. A natural vegetative cover will be established and maintained over the

cap.

Institutional controls (i.e., land use restrictions) will be required to aid in the management of the wastes left onsite and will be maintained by the future owner. In addition, long-term monitoring of the containment cell, cap and the surface water in Mill Street Ditch and Chatlin Lake Canal as well as the ground water will be required to ensure that contaminants are not leaching from the containment cell and to verify the cap retains its integrity. The EPA will also be required to conduct remedy reviews at least every five years.

This alternative will achieve all RAO and meet the CLs. This alternative may be compatible with the expected future landuse and Alexandria's Site reuse project. Because the contaminants will be contained, this remedy does not meet the Agency's preference for treatment of principal threat wastes.

Alternative 3: STABILIZATION AND CAPPING

Estimated Capital Cost: \$2,669,671
Estimated Annual O&M Cost: \$731,578
Estimated Present Worth Cost: \$3,401,249
Estimated Construction Timeframe: 9 to 12 months
Estimated Time to Achieve RAOs: 9 to 12 months

The waste material will be segregated into one stockpile for the hazardous waste, one pile for soil exceeding LA SPLP, and another stockpile for building debris. Lead and antimony contaminated soils which exceed the CLs for human health may be left in place without being excavated. Confirmation sampling will be required to adequately segregate the wastes.

The 1,300 yd³ of hazardous waste and the 4,650 yd³ of soil exceeding LA SPLP (out of the total 15,000 yd³) will be stabilized. Stabilization involves mixing the material with a reagent to physically or chemically bind the metals in the waste material to prevent leaching. During design, a treatability study will determine the proper reagent and mixing ratio. Once the material has been stabilized, it will be sampled to verify that it no longer exceeds TCLP lead or protection of ground water standards. Site wastes will be contained onsite using a containment cell and cap. The stabilized and building debris wastes will be compacted into a consolidation cell. The cell and remaining soils will be capped with clay and/or an impermeable membrane liner. Topsoil will be placed on the cap and a natural vegetative cover will be established and maintained over the cap.

Remedial Alternative 3 is similar to Remedial Alternative 2 except that some of the wastes will be stabilized prior to capping/containment. In addition, the containment cell for Remedial Alternative 3 may not need an impermeable bottom, leachate collection system, or vapor recover system because the wastes have been stabilized to prevent contaminant migration.

Institutional controls (i.e., land use restrictions) will be required to aid in the management of the wastes left onsite and will be maintained by the future Site owner. In addition, long-term monitoring of the containment cell, cap and the surface water in Mill Street Ditch and Chatlin Lake Canal as well as the ground water will be required to ensure that contaminants are not leaching from the containment cell and to verify the cap retains its integrity. The EPA will also be required to conduct remedy reviews at least every five years.

This alternative will achieve all RAO and meet the CLs. This alternative may be compatible with the expected future landuse and Alexandria's Site reuse project. Because the hazardous

waste will be stabilized, this portion meets the Agency's preference for treatment of principal threat wastes. However, the remaining lead and antimony contaminated soil will be contained, which does not meet the Agency's preference for treatment of principal threat wastes.

Alternative 4: STABILIZATION AND OFFSITE DISPOSAL

Estimated Capital Cost: \$5,007,412
Estimated Annual O&M Cost: \$0
Estimated Present Worth Cost: \$5,007,412
Estimated Construction Timeframe: 9 to 12 months
Estimated Time to Achieve RAOs: 9 to 12 months

Lead and antimony contaminated soils will be excavated and segregated from the hazardous waste foundry material and the building debris in separate stockpiles. Confirmation sampling will be required to adequately segregate the wastes. The 1,300 yd³ of hazardous waste will be stabilized. Once the material has been stabilized, it will be sampled to verify that it no longer exceeds TCLP lead. The stabilized material, the 300 yd³ of building debris, and the 15,000 yd³ of lead and antimony contaminated soil and soil exceeding LA SPLP will be disposed offsite at a RCRA regulated Subtitle D facility. Offsite disposal activities will be conducted in accordance with RCRA LDR standards. The excavated areas will be backfilled with clean fill and compacted. Topsoil will be placed over the disturbed area and a natural vegetative cover will be established and maintained over the Site.

Remedial Alternative 4 is similar to Remedial Alternative 3 except that soils exceeding LA SPLP do not need to be stabilized and the wastes are disposed offsite rather than being capped.

Institutional controls should not be required because none of the waste material will be left on Site. In addition, long-term monitoring of the surface water in Mill Street Ditch and Chatlin Lake Canal as well as the ground water should not be required. Because the waste material will be disposed offsite, five-year reviews of the remedy will not be required.

This alternative will achieve all RAO and meet the CLs. This alternative is compatible with the expected future landuse and Alexandria's Site reuse project. Because the hazardous waste will be stabilized, this portion meets the Agency's preference for treatment of principal threat wastes. The remaining lead and antimony contaminated soil will be disposed of offsite; therefore, it does not meet the Agency's preference for treatment of principal threat wastes.

Alternative 5: EXCAVATION AND OFFSITE DISPOSAL

Estimated Capital Cost: \$5,537,975
Estimated Annual O&M Cost: \$0
Estimated Present Worth Cost: \$5,537,975
Estimated Construction Timeframe: 9 to 12 months
Estimated Time to Achieve RAOs: 9 to 12 months

Lead and antimony contaminated soils will be excavated and segregated from the hazardous waste foundry material and the building debris in separate stockpiles. Confirmation sampling will be required to adequately segregate the wastes. The 1,300 yd³ of hazardous waste will be disposed offsite at a RCRA Subtitle C Facility. The 15,000 yd³ of lead and antimony contaminated soil and soil exceeding LA SPLP and the 300 yd³ of building debris will be disposed offsite at a RCRA regulated Subtitle D facility. All offsite disposal activities will be conducted in accordance with RCRA LDR standards. The excavated areas will be backfilled

with clean fill and compacted. Topsoil will be placed over the disturbed area and a natural vegetative cover will be established and maintained over the Site.

Remedial Alternative 5 is similar to Remedial Alternative 4 except that the hazardous waste foundry material is not stabilized prior to disposal and it is disposed of at a RCRA regulated Subtitle C rather than a RCRA regulated Subtitle D facility.

Institutional controls should not be required because none of the waste material will be left on Site. In addition, long-term monitoring of the surface water in Mill Street Ditch and Chatlin Lake Canal as well as the ground water should not be required. Because the waste material will be disposed offsite, five-year reviews of the remedy will not be required.

This alternative will achieve all RAO and meet the CLs. This alternative is compatible with the expected future landuse and Alexandria's Site reuse project. Because the contaminants will be removed and disposed of offsite, this remedy does not meet the Agency's preference for treatment of principal threat wastes.

18. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The EPA uses nine NCP criteria to evaluate remedial alternatives for the cleanup of a release. These nine criteria are categorized into three groups: threshold, balancing, and modifying. The threshold criteria must be met in order for an alternative to be eligible for selection. The threshold criteria are overall protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs). The balancing criteria are used to weigh major tradeoffs among alternatives. The five balancing criteria are long-term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; short-term effectiveness; implementability; and cost. The modifying criteria are state acceptance and community acceptance. The following briefly describes the evaluation criteria:

In the following analysis, the remedial alternatives are evaluated in relation to each other with regard to the nine criteria noting the relative advantages and disadvantages of each alternative.

1. Overall Protection of Human Health and the Environment

All of the alternatives except the "no action" alternative would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through treatment, containment, engineering controls, and/or institutional controls.

For alternatives 2 and 3, protectiveness will be obtained through containment; however, perpetual cap maintenance will be required to ensure total protectiveness. Any breach in the cap would potentially expose individuals to existing levels of contamination. For alternative 2, breaching of the cap or containment cell may allow leachate to contaminate the ground water, whereas alternative 3 has provided additional protectiveness by stabilizing the hazardous waste and soil exceeding LA SPLP. Alternatives 4 and 5 provide the greatest degree of protectiveness because the waste will be removed and disposed offsite.

Because the "no action" alternative is not protective of human health and the environment, it was eliminated from consideration under the remaining eight criteria.

| EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall Protectiveness of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment. |
| Compliance with ARARs evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified. |
| Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time. |
| Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present. |
| Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation. |
| Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services. |
| Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent. |
| State/Support Agency Acceptance considers whether the State agrees with the EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan. |
| Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance. |

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

All soil alternatives would meet their respective ARARs from Federal and State laws. Alternatives 4 and 5 would require testing of the soils to ensure that residuals meet LDR standards prior to disposal. Alternatives 2 and 3 are not required to meet LDR standards or minimum technology requirements because contamination would be consolidated onsite (preamble to the NCP, 55 FR 8758-8760, March 8, 1990).

3. Long-term Effectiveness and Permanence

Alternative 2 and Alternative 3 would prevent the direct contact exposure and contaminant migration, however, monitoring, Site maintenance, and enforcement of institutional controls would be necessary to ensure the long-term effectiveness and permanence of these alternatives. Because alternatives 2 and 3 leave wastes onsite above levels that allow for unlimited use, these remedies would be reviewed no less than once every five years. Alternative 4 and Alternative 5 provide greater long-term effectiveness and permanence by reducing the inherent hazards posed by the contaminants at the Site to health-based levels and eliminating further controls to ensure remedy effectiveness and permanence.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

Alternative 5 provides no reduction of the toxicity, mobility, or volume of contaminants. Alternative 2 provides reduction of the mobility of the contaminants, however it does not reduce

contaminant toxicity or volume. Like Alternative 2, Alternatives 3 and 4 provide reduction in mobility and do not reduce toxicity, however these are expected to increase the volume of contaminated material through the stabilization process due to the addition of stabilization reagents. Ultimately, Alternatives 4 and 5 will result in wastes being disposed of offsite.

5. Short-term Effectiveness

Alternatives 2 through 5 involve excavation of contaminated soils and thus present a potential for short-term exposure. All alternatives pose potential risks to construction workers and nearby residents during excavation and handling of contaminated material primarily associated with equipment movement and exposure to contaminated dust. Control of dust and run-off will limit the amount of materials that may migrate to a potential receptor, and workers would be required to wear the appropriate level of protection to avoid exposure during excavation and treatment activities. Air monitoring and short-term monitoring of the surface water and ground water will be performed during all excavation activities.

Alternatives 3 and 4 may also pose additional short term risks to the nearby residents and onsite workers due to the increased handling required for application of the reagent and potential emissions from the onsite stabilization. Alternatives 4 and 5 may present a higher short-term risk to the nearby residents because of the potential for exposure to the contaminated soils by trucking the material to an offsite facility.

6. Implementability

For all Alternatives, administrative coordination, labor, equipment, materials, and outside services will be required. These alternatives utilize conventional material and equipment which are widely used and accepted in the construction industry.

Difficulties may be encountered for Alternatives 2 and 3 during construction of the onsite disposal cell depending on the conditions of the subsurface soil.

7. Cost

Order of magnitude cost estimates were developed for each remedial alternative using procedures outlined in the EPA *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (EPA 2000). These cost estimates were prepared for assistance with comparing the relative costs between the various remedial alternatives and are considered accurate only to +50/-30 percent. The cost estimates have been based on the information that is currently available for the Site and on the cost data available from EPA guidance. A revised cost estimate should be prepared with additional detail after developing a conceptual design for the selected remedial alternative. The estimated present worth cost for Alternative 3 is less than Alternative 2. Alternative 2 is less than Alternative 4, and Alternative 5 is the most costly.

8. State/Support Agency Acceptance

The State of Louisiana supports the Preferred Alternative (Appendix A).

9. Community Acceptance

Throughout the Site project there has been a continued public interest. During the public comment period for the proposed plan, both oral and written comments were received. The responses to these comments are included in the Responsiveness Summary to this ROD (Part 3).

The community supports a remedy that removes wastes from the site.

19. PRINCIPAL THREAT WASTES

The contaminated soil and sediment as well as the ACM, UST liquid, and wastes exceeding lead TCLP are identified as principal threat wastes. The UST contents will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or OPA authority. These principal threat wastes are either highly toxic, liquid, or hazardous source materials that would pose a significant risk to young children and adults. Redevelopment of the Site as a recreational/commercial environment would result in an unacceptable risk to children through direct exposure with Site soils unless remediated.

The EPA expects to use treatment to address the principal threats posed by a site, wherever practicable, and engineering controls for waste that poses a relatively low long-term threat or where treatment is impracticable. Through the use of treatment as a principal element, the response action will satisfy the preference for treatment and reduce the toxicity and mobility of the hazardous source material that constitutes the principal threat wastes at the Site.

WHAT IS A "PRINCIPAL THREAT"?

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

20. THE SELECTED REMEDY

1. Summary of the Rationale for the Selected Remedy

The Preferred Alternative for cleaning up the Ruston Foundry Site is Remedial Alternative 4 (Stabilization and Offsite Disposal). Alternative 4 meets the RAOs through attainment of cleanup levels and is selected over other alternatives because it is easily implemented, expected to achieve substantial and long-term permanence and risk reduction through treatment and offsite disposal, and is expected to allow the property to be used for the reasonably anticipated future land use, which is recreational/commercial. Because the waste material will be disposed offsite, operations and maintenance activity and five-year reviews of the remedy will not be required. Alternative 4 also reduces the risk within a reasonable time frame and at less cost than Alternative 5.

Based on the information available at this time, the EPA and the State of Louisiana believe the Preferred Alternative will be protective of human health and the environment, will comply with ARARs, and will utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. Because it will treat the hazardous source materials constituting

principal threats, a portion of the remedy will meet the statutory preference for the selection of a remedy that involves treatment as a principal element. Treatment of the lead and antimony contaminated soil will not be cost effective since the soils are not identified as hazardous wastes and can be disposed of in a RCRA Subtitle D facility.

2. Description of the Selected Remedy

Implementation of this remedial alternative at the Ruston Foundry Site would involve the following general sequence.

- During remedial action, efforts will be made to control dust and run-off to limit the amount of materials that may migrate to a potential receptor. Air monitoring and short-term monitoring of the surface water and ground water will be conducted during times of remediation to ensure that control measures are working to regulate Site emissions.
- Initial clearing and grubbing will be required for Site access and implementation of remedial activities.
- The ACM will be consolidated onsite, contained, and transported offsite to a disposal facility licensed to accept asbestos material. This work will be performed by a licensed asbestos contractor and methods to control airborne dispersion of asbestos will be implemented during remediation.
- The UST, its contents, and surrounding petroleum and PCB contaminated soils will be removed and disposed offsite in accordance with all federal, state, and local regulations. Confirmation sampling will be required to ensure wastes are removed.
- Existing buildings will be demolished and the building debris, concrete slabs, existing sump, and trash will be removed and disposed offsite.
- The former onsite water supply well will be plugged and abandoned in accordance with all federal, state, and local regulations.
- Lead and antimony contaminated soils will be excavated and segregated from the hazardous waste foundry material and the building debris. Confirmation sampling will be required to adequately segregate the wastes and ensure wastes are removed.
- The hazardous waste stockpile will be stabilized. This process can take several forms, but basically will involve mixing the material with a reagent (cement, proprietary agents, flyash, etc.) to physically or chemically bind the metals in the waste material to prevent leaching. A treatability study will be required prior to implementing this alternative to determine the proper agent and the proper mixing ratio. Mixing can be accomplished with conventional construction equipment, a pug mill, or with tilling/discing equipment. Once the material has been stabilized, it will be sampled to verify that it no longer exceeds TCLP for lead.
- The stabilized material and the lead and antimony contaminated soil will be disposed offsite at a RCRA regulated Subtitle D facility.
- Subsequent to confirmation sampling of the soils to ensure all waste has been removed from the site, the excavated areas will be backfilled with clean fill and compacted. Topsoil will be placed over the disturbed area and a natural vegetative cover will be established.
- Institutional controls, such as enforceable land use restrictions, should not be required because none of the waste material will be left onsite. In addition, long-term monitoring of the surface water in Mill Street Ditch and Chatlin Lake Canal as well as the ground water should not be required. However, short-term monitoring of the surface water and ground water may be necessary, to ensure that impacts from the RA have not occurred.

3. Summary of Estimated Remedial Cost

Table 13 shows the Estimated Costs for the Selected Remedy. The information in this cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Differences (ESD), or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

4. Expected Outcomes of the Selected Remedy

The expected outcome of the selected remedy is that the Site will no longer present an unacceptable risk to human health because the hazardous waste will be excavated, stabilized, and disposed of offsite, contaminated soil and sediment will be excavated and disposed of offsite, and the ACM and UST will be removed and disposed of offsite (Table 14). The property will be suitable for recreational/commercial land use approximately one year after the start of the remedial action. The remedy will also be protective of ground water by removing soil that exceeded the Louisiana screening criteria for concentrations protective of ground water. It is anticipated that the selected remedy will also provide community revitalization impacts because it will be compatible with Alexandria's Site reuse plan.

21. STATUTORY DETERMINATIONS

The remedial action selected for implementation at the Ruston Foundry Superfund Site is consistent with CERCLA and, to the extent practicable, the NCP. The selected remedy is protective of human health and the environment, will comply with ARARs and is cost effective. In addition, the selected remedy utilizes permanent solutions to the maximum extent practicable, and satisfies the statutory preference for treatment that permanently and significantly reduces the mobility, toxicity or volume of hazardous substances as a principal element.

1. The Selected Remedy is Protective of Human Health and the Environment

The remedy at this Site will adequately protect human health and the environment by eliminating, reducing or controlling exposures to human receptors through treatment and offsite disposal of the hazardous waste and excavation and offsite disposal of soil and sediment contaminated with hazardous substances.

The selected remedy will reduce potential human health risk levels such that these levels do not exceed a non-carcinogenic hazard index of 1 and do not present a greater than 5% chance of a child exceeding a 10µg/dl blood lead level. Also, CLs will ensure minimal migration, to the extent possible, of Site contaminants into the ground water. In addition, the remedy will comply with ARARs and is anticipated not to pose any unacceptable short-term risks or cross-media impacts.

2. Compliance with Applicable or Relevant and Appropriate Requirements

ARARs include substantive provisions of any promulgated Federal or more stringent State environmental standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements for a CERCLA site or action. Applicable requirements are those clean-up standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial

action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements are requirements that, while not legally "applicable" to circumstances at a particular CERCLA site, address problems or situations sufficiently similar to those encountered at the site that their use is well-suited.

The selected remedy will comply with all Federal and any more stringent State ARARs that pertain to the Site. Section 121(d) of CERCLA states that remedial actions must attain or exceed ARARs. The ARARs are divided into three categories, location-specific, chemical specific, and action-specific and are listed in Table 15 through 17.

3. The Selected Remedy is Cost-Effective

The selected remedy is cost-effective because the remedy's costs are proportional to its overall effectiveness (see 40 CFR § 300.430(f)(1)(ii)(D)). This determination was made by evaluating the overall effectiveness of those alternatives that satisfied the threshold criteria (i.e., that are protective of human health and the environment and comply with all Federal and any more stringent State ARARs, or as appropriate, waive ARARs). Overall effectiveness was evaluated by assessing three of the five balancing criteria -- long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness, in combination. The overall effectiveness of each alternative then was compared to the alternative's costs to determine cost-effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs and hence represents a reasonable value for the money to be spent.

The present worth cost of Alternative 4, the Selected Remedy, is higher in costs than alternative 2 (Containment) and alternative 3 (Stabilization and Capping), and is lower in costs to Alternative 5 (Excavation and Offsite disposal). However, the Selected Remedy offers a much higher degree of protectiveness and overall effectiveness than Alternatives 2 and 3 because it offers treatment and removal of wastes versus consolidation of wastes (i.e., containment) or onsite disposal of wastes (capping). The benefits of The Selected Remedy compared to the other alternatives are much higher than the increase in costs.

4. Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practical manner at the Site. The Selected Remedy provides the best balance of trade-offs in terms of the five balancing criteria, considering State and community acceptance, while also considering the statutory preference for treatment as a principal element and the bias against offsite treatment and disposal.

The Selected Remedy utilizes treatment of the hazardous wastes to address this principal threat waste at the Site. All lead and antimony contaminated soil and sediment will not satisfy the preference for treatment because soil and sediment will be excavated and disposed of offsite.

5. Preference for Treatment as a Principal Element

Because it will treat the hazardous source materials constituting principal threats, a portion of the remedy will meet the statutory preference for the selection of a remedy that involves treatment as a principal element. Treatment of the lead and antimony contaminated soil, ACM, and UST contents would not be cost effective since the wastes are not identified as hazardous wastes and can be disposed of in a RCRA Subtitle D facility.

6. Five-year Review Requirements

Because this remedy will not result in hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for unlimited use and unrestricted exposure, a five-year review will not be required for this remedial action.

22. DOCUMENTATION OF SIGNIFICANT CHANGES

The proposed plan for the Ruston Foundry Superfund Site was released on March 30, 2002. The Proposed Plan identified Alternative 4 (Stabilization and Offsite Disposal) as the preferred alternative. The public comment period was held from April 1, 2002, to April 30, 2002. The EPA reviewed and responded to two written and twenty-four verbal comments submitted during the public comment period (see Part 3. The Responsiveness Summary). It was determined that no significant changes to the remedy, as originally identified in the proposed plan, were necessary.

23. STATE ROLE

The Louisiana Department of Environmental Quality, on behalf of the State of Louisiana, has reviewed the various alternatives and has indicated its support for the selected remedy. The State has also reviewed the Remedial Investigation, Risk Assessment and Feasibility Study to determine if the selected remedy is in compliance with applicable or relevant and appropriate State environmental and facility siting laws and regulations. The State of Louisiana concurs with the selected remedy for the Ruston Foundry Superfund Site (Appendix A).

PART 3. THE RESPONSIVENESS SUMMARY

The concerns of the community should be considered when selecting a remedial alternative. Much information has been exchanged with the area residents and community leaders concerning the Site. The EPA held an Open House (March 28, 2002) and a Public Meeting (April 18, 2002) in Alexandria, Louisiana, to provide information to the public regarding cleanup activities. There is also an Administrative Record file at all information repositories that contain documents supporting this Record of Decision. This Administrative Record file includes a transcript of the Public Meeting, which records answers to the public comments. Many of the comments concerned the differences between Alternatives 4 and 5 and the future site reuse project. These comments and any additional comments received during the comment period (April 1 through April 30, 2002) are summarized below:

Comment 1: Who will be required to pay for the costs? What's the expected time frame needed to make that happen?

EPA Response 1: At this time, we have identified three potentially responsible parties (PRPs): the Louisiana Pine Products, the Ruston Foundry and Machine Shop, Inc., and Kansas City Southern Railway. They did not step forward and provide services for the remedial investigation. Before remedial action begins, the PRPs will be provided with an opportunity to do the remedial design/remedial action (RD/RA). The PRPs have 60-days to submit a good-faith offer. If an offer is made, negotiations can be extended 60-days, for a total of 120-days. If additional time is needed, an extension can be granted past the 120-days. If they do not provide a good-faith offer, the RD/RA may be implemented using superfund moneys, or the PRPs may be ordered to do the work. If the PRPs do not do the work, we could pursue the PRPs in cost recovery.

Comment 2: What is the difference between Alternative 4 and 5, and why does EPA choose 4 rather than 5?

EPA Response 2: Alternative 4, Stabilization and Offsite Disposal, requires that the hazardous wastes be stabilized (treated) onsite. Following treatment, the hazardous waste, along with other site wastes (soil, underground storage tank, asbestos, debris) will be shipped offsite for disposal. Alternative 5, Excavation and Offsite Disposal, requires that the hazardous waste, along with other site wastes, be removed and shipped offsite for disposal. Alternative 5 does not treat the hazardous wastes prior to disposal. The cost difference between Alternatives 4 and 5 is due to the stabilization process. By treating the hazardous waste onsite prior to disposal, the waste can be disposed of in a RCRA subtitle D facility. Untreated hazardous waste must be disposed of in a RCRA subtitle C facility which is more costly.

During remedial action for Alternatives 4 and 5, air monitoring and dust suppression methods will be used to control air emissions. The risks associated with removal of wastes will be about the same for each alternative because both involve the excavation of wastes and the shipment of waste through the neighborhood. Alternative 4 may be safer because the hazardous waste will be treated prior to offsite disposal. Once the waste is removed, a long-term monitoring plan will not be needed.

Remedial action for both alternatives is estimated at 9 to 12 months. Confirmation samples will be taken to make sure that we have met our cleanup-level. At the completion of remedial action, all hazardous waste and contaminated site wastes will have been removed, and the site will be available for reuse.

As part of the feasibility study, we are required to identify a range of alternatives that include treatment and containment options. The range represents those alternatives that will address site contamination through various techniques or methods and at various costs. Using the nine criteria, we compare the various alternatives to choose one. Alternative 4 was selected because the hazardous waste will be treated, all site wastes will be removed, the site will be available for reuse, the construction time frame is relatively short and cost-effective, no future remedy monitoring is necessary, it is protective of human health and the environment, and meets all ARARs.

Comment 3: Do you have other sites where you have used Alternative 4?

EPA Response 3: The Delatte Metals site is located southeast of Ponchatoula, Louisiana. The remedy for this Site requires that lead waste be stabilized and then shipped offsite.

Gulf Coast Vacuum Services is a superfund site located in Abbeville, Louisiana. The remedy for this site is similar in that, stabilization of soil contaminated with metals was performed onsite. Disposal for this site was done in an onsite landfill rather than being disposed of offsite.

Comments 4: How are we going to develop the property? Is there anything that we can or can't do? We don't want a park; we want to create jobs. We have an economic development district that falls in the area, and we're working on creating a tax base by bringing in businesses.

EPA Response 4: The Reuse Grant provided to the City of Alexandria requires that the city and the community collaborate on a future reuse plan for development of the area. We encourage the citizens to get involved with their local government to produce a plan that will be beneficial for all involved.

We do not specify the specific reuse project, however, the future plan must be compatible with the site clean-up levels and landuse designations. After the implementation of Alternative 4, all wastes will be removed. Though the site risk assessment used a recreational scenario to evaluate future site risk, the clean-up and removal of site wastes will leave the area open to redevelopment of any type, including commercial.

Comments 5: I am concerned about the health hazards residents in the area have been exposed to for 70-odd years. I've been a long-term resident, and when I moved to the area, my son was two weeks old. He's 20 years old now, and he has been sick the whole time.

LOPH Response 5: I'm (Dr. Naponick) going to give you my card. If you can call me next week, we'll see if we can look into some of the troubles with your son and see what type of testing we can do. We did some surveys and went door to door to try to find out what the health concerns were. We'll check into it and take a look and see what we can do.

Comment 6: When this decision is made, will this be made out of Washington, D.C., or will it be made out of the Dallas office? Who do we need to talk to?

EPA Response 6: The decision will be made out of the Dallas Office. You can contact EPA using the toll free number, 1-800-533-3508. The remedial project manager is Katrina Coltrain (214-665-8143) and the community involvement coordinator is Janetta Coats (214-665-7308).

Comment 7: My understanding of this is, the slag and ground soil that is contaminated will be removed, but the drums and the tanks will not. We had a couple of drums that were leaking, old, and rusty. How will you remove these and not recontaminate the area?

EPA Response 7: The slag, soil, and the underground storage tank will be removed. The tank will be drained of its liquid which will be placed in containment drums and shipped offsite. Then, we'll remove the tank parts and dispose of those offsite. We'll remove the associated contaminated soil and take confirmation samples to make sure we have removed all the waste. The slag waste will be stabilized and shipped offsite, and contaminated Site soils will be removed and shipped offsite. Confirmation soil samples will be taken to make sure that we've removed all waste. The air will be monitored during remedial action and dust suppression techniques will be used to make sure that we limit air emissions.

Comment 8: I am concerned about the contaminated water. We talked about the purity level and lead, mercury, and other contaminants in the water. Is there anything we can do to inform the people that this water is indeed contaminated?

EPA Response 8: The surface water did have lead and mercury associated with it. When the human health risk assessment evaluated the surface water, there was no unacceptable risk identified for the child recreator. You would expect a child to play in the canal, drink the water, and play in the sediment, however when evaluated, the risk assessment showed that at the current levels the children were not exposed to an unacceptable risk. Therefore, according to the risk assessment the water is safe.

Comment 9: Can you pick and choose some things from Alternative 3 or 5 and fit into 4?

EPA Response 9: These are proposed alternatives, so send a comment or comment now on how you would like to see them changed.

Comment 10: Is there anything being done with the adjoining Hind Yard Area (scrap iron

facility)? Are you being proactive in looking at this property?

LDEQ Response 10: You can call 1-888-263-5424 and tell DEQ you have a complaint to make. DEQ will send an inspector, and if he sees spills or if he sees things they're not supposed to be doing, then they're going to have to correct it. Either way, the facility will have to take samples, or we will take samples if there is a problem. If the site is identified as being contaminated, then the state does take action. But if we don't know about it, we can't do anything. Usually, the action entails finding out who owns the site and ordering them to clean it up. If they don't clean it up, then we have a state fund that we use to clean it up. Then, we go to court and sue the previous business to get the money back. We don't always get the money back, so the tax payers sometimes end up having to pay for it.

Comment 11: It is stated that the Louisiana Department of Environmental Quality had identified this site in 1990. Then, in 1999, Superfund notified the area. Why was nothing done in that length of time?

LDEQ Response 11: Sometimes a site can be handled quicker and better by the EPA than by the State. In other words, the EPA's generally more neutral towards any businesses that might own that property. The State of Louisiana may have reasons why they can't or don't enforce something on somebody. By handing it over to the EPA, it may take a little longer, but it does get done that way.

Comment 12: What's the process when allowing or letting the contracts to remediate? Are there criteria for local contractor involvement? Is it a possibility for others to be certified to become a regional contractor for such work?

EPA Response 12: Generally, if it is fund-lead, EPA would take charge. With all EPA fund-lead projects, the regional contractors are used which, in our case, will be either CH2M Hill or Tetra Tech. From there, they actually do the subcontracting to get the work done, and would know when and at what time they're letting contracts. If the PRPs step forward, we can't stipulate to the PRPs who to hire to do the work, but we can encourage them to look to the local area and local businesses to do the work. Our regional contracts do contain small/small disadvantaged, hub zones and women-owned business goals for subcontract work. Thus far, the regional contractors have exceeded those goals. The contracts for those two regional contractors were extended for five years, so the next time that it's put out for bid would be in either 2005 or 2006. It's a nationwide letting process and bids come in from all over.

Comment 13: Where is the human factor as we get past the clean up? How do we treat those persons that have been effected by this hazardous waste area?

EPA Response 13: The human factor is intertwined with the superfund process. Throughout the process, the community has been interested and involved with Site activity. We have kept the community and other interested parties updated on Site activities through informational meetings, fact sheets, and public meetings. Human health risks are evaluated during the human health risk assessment. Our remedial action will be based on our human health evaluation which tells us what levels we have to clean-up to in order to be safe.

Throughout the whole process we have worked with the Louisiana Office of Public Health (LOPH). Information that we gathered during the remedial investigation and the human health risk assessment was passed onto the LOPH. You're health concerns can be directed to Sharee Rusnak, who works for LOPH in New Orleans.

Comment 14: What's the process for hotline calls or reporting? Is there a method of notification for the reporter? How far in advance are they given notice that you're coming?

LDEQ Response 14: When a complaint comes into DEQ, a field person from the Alexandria office, the Monroe office, or even our office will be sent out. These inspections are unannounced, and if there is a problem, they'll refer it to the remediation group, who goes out, looks at it, and takes samples. The DEQ is going to make their decision on those samples to see whether or not there's a problem. If the facility has broken a law, for instance, storing hazardous waste improperly, they're discharging contaminated waste without their permits, or they have unmarked waste drums or tanks without containment, they're going to get an enforcement action, and the law is going to make them fix those problems. The other problem, ground water contamination, will be more of a long-term process because we're going to have to get them to put in ground water wells, send us any work plans, and come up with the money. If they don't, then we have to go through the legal process to find out if they can afford this. If they're an active business that doesn't have the money to do a multi-million dollar clean-up, they may claim bankruptcy, and go out of business.

Comment 15: Once we get to the end, and the site's ready to be developed, is there some type of partnership between EPA and HUD for development of funds, or is there anything else available?

EPA Response 15: Barbara Greenfield, our redevelopment contact, may be able to put you in contact with other programs that may provide assistance to communities involved in Superfund.

Comment 16: I am disagreeing with this plant operating in a community. I am suggesting that this site be moved to an area that would not include any harm being done to human beings. I would like to suggest that the following be considered for the people in the community: 1) relocate the iron foundry to a new site where it would not involve people's lives, and (2) if the iron foundry must remain, then buy the surrounding property and relocate the citizens in the community.

EPA Response 16: The Ruston Foundry site is currently an abandoned facility which ceased operations in 1985. The operations of that facility resulted in contamination of the soils and sediment. The purpose of EPA's involvement is to clean up this contamination and leave the site available for reuse by the City of Alexandria and the community. The discussions regarding business development are a part of the future reuse plans being developed by the City and the community.

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| Table 1: Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------|--------|-------|------------------------|------------------------------|------------------------------------|---------------------------------|
| Exposure Point | Chemical of Concern | Concentration Detected | | Units | Frequency of Detection | Exposure Point Concentration | Exposure Point Concentration Units | Statistical Measure |
| | | Min | Max | | | | | |
| Scenario Timeframe: Current-Youth Trespasser | | Medium: Soil | | | | Exposure Medium: Hot Spot | | |
| Soil: Onsite, Direct Contact | Antimony | 7.8 | 7300 | mg/kg | 4/4 | 7300 | mg/kg | MAX |
| Scenario Timeframe: Future-Adult Recreator | | Medium: Soil | | | | Exposure Medium: Hot Spot | | |
| Soil: Onsite Direct Contact | Antimony | 7.8 | 7300 | mg/kg | 4/4 | 7300 | mg/kg | MAX |
| Scenario Timeframe: Future-Child Recreator | | Medium: Soil | | | | Exposure Medium: Soil | | |
| Soil: Onsite Direct Contact | Antimony | .62 | 10,000 | mg/kg | 80/80 | 250 | mg/kg | 95% UCL of log transformed data |
| Soil: Onsite Direct Contact | Lead | 21 | 38,000 | mg/kg | 80/80 | 1400 | mg/kg | 95% UCL of log transformed data |
| Scenario Timeframe: Future-Child Recreator | | Medium: Soil | | | | Exposure Medium: Hot Spot | | |
| Soil: Onsite Direct Contact | Antimony | 7.8 | 7300 | mg/kg | 4/4 | 7300 | mg/kg | MAX |
| Scenario Timeframe: Future-Child Recreator | | Medium: Soil | | | | Exposure Medium: Slag | | |
| Soil: Onsite Direct Contact | Antimony | 6.7 | 1300 | mg/kg | 23/23 | 190 | mg/kg | 95% UCL of log transformed data |
| Key mg/kg: milligrams per kilograms Reference: Human Health Risk Assessment (Hill, 2002) tables 2.2, 2.9, 2.10, 2.11, 2.13, 3.2, 3.9, 3.10, 95% UCL: 95% Upper Confidence Limit 3.11, and 3.13. MAX: Maximum Concentration | | | | | | | | |

Table 2: Summary of Exposure Parameters based on Reasonable Maximum Exposure.

| Exposure Route | Parameter Code | Parameter Definition | Units | Youth Trespasser | Residential Adult | Residential Child-soils |
|----------------|----------------|-----------------------------------------|--------------------|-------------------|-------------------|-------------------------|
| Ingestion | CS | Chemical Concentration in Soil | mg/kg | Chemical Specific | Chemical Specific | Chemical Specific |
| | IR (IRc) | Ingestion Rate of Soil | mg/day | 150 | 100 (200) | 200 |
| | FI | Fraction Ingested | unitless | 1.0 | 1 | 1.00 |
| | EF | Exposure Frequency | days/year | 60 | 60 | 60 |
| | ED (EDc) | Exposure Duration | years | 10 | 30 (6) | 6 |
| | CF | Conversion Factor | kg/mg | 1.0E-6 | 1.0E-6 | 1.00E-6 |
| | BW (BWc) | Body Weight | kg | 43 | 70 (15) | 15 |
| | AT_C | Averaging Time (Cancer) | days | 25,550 | 25,550 | 25,550 |
| | AT_N | Averaging Time (Non-Cancer) | days | 3,650 | 10,950 | 2,190 |
| | IR_adj | Age-adjusted Soil Intake Rate | mg-yr/kg-day | | 114 | |
| Dermal | CS | Chemical Concentration in Soil | mg/kg | Chemical Specific | Chemical Specific | Chemical Specific |
| | SA | Skin Surface Area Available for Contact | cm ² | 5,000 | 5,800 | 2,900 |
| | AF | Adherence Factor | mg/cm ² | .14 | .07 | .20 |
| | ABS | Absorption Constant | unitless | Chemical Specific | Chemical Specific | Chemical Specific |
| | EF | Exposure Frequency | days/year | 60 | 60 | 60 |
| | ED | Exposure Duration | years | 10 | 30 | 6 |
| | CF | Conversion Factor | kg/mg | 1.0E-6 | 1.0E-6 | 1.00E-6 |
| | BW | Body Weight | kg | 43 | 70 | 15 |
| | AT_C | Averaging Time (Cancer) | days | 25,550 | 25,550 | 25,550 |
| | AT_N | Averaging Time (Non-Cancer) | days | 3,650 | 10,950 | 2,190 |

KEY

mg/kg
mg/day
kg/mg
kg
cm

milligrams per kilogram
milligrams per day
kilograms per milligram
kilograms
centimeters

mg-yr/kg-day
mg/cm
Reference:
(c)

milligrams a year per kilograms a day
milligrams per centimeter
Human Health Risk Assessment (Hill, 2002) tables 4.2a, 4.9a, 4.10a, 4.11a, and 4.13a.
Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual
Supplemental Guidance Dermal Risk Assessment Interim Guidance, (US EPA, 1998)

Table 3: Equation and Input Values Used to Calculate TWA Soil Concentrations (PbS_w)

$$\text{PbS}_w = \text{EF}_{\text{site}} * [(\text{F}_{\text{site}} \times \text{PbS}_{\text{site}}) + (\text{F}_{\text{yard}} \times \text{PbS}_{\text{yard}})] + (\text{EF}_{\text{yard}} \times \text{PbS}_{\text{yard}})$$

| Parameter | Description | Units | Activity Level | | |
|-----------|---------------------------------------------------------------|----------|----------------|---------------|---------------|
| | | | Low | Medium | High |
| | | | 0.1428571 | 0.4285714 | 0.7142857 |
| EF_site | Exposure frequency onsite | dys/wk | 1 dy/wk | 3 dy/wk | 5 dy/wk |
| F_site | Fraction of daily outdoor time spent onsite | unitless | 0.1 | 0.25 | 0.5 |
| PbS_site | Average soil concentration onsite | µg/g | 1,400 | 1,400 | 1,400 |
| F_yard | Fraction of daily outdoor time at local background (1-F_site) | unitless | 0.9 | 0.75 | 0.5 |
| PbS_yard | Average Soil Concentration near home | µg/g | yard-specific | yard-specific | yard-specific |
| EF_yard | Fraction of days/week child does not visit site (1-EF_site) | unitless | 0.8571429 | 0.5714286 | 0.2857143 |

KEY

µg/g micrograms per gram
dy/wk days per week

| Table 4: Non-Cancer Toxicity Data Summary | | | | | | | | | |
|--------------------------------------------------|----------------------------|-----------------------|-----------------------|----------------------------|-------------------------|-----------------------------|------------------------------------------------|-------------------------------------|------------------------------------------------|
| Pathway: Ingestion, Dermal | | | | | | | | | |
| Youth Trespasser and Adult Recreator | | | | | | | | | |
| Chemical of Concern | Chronic/ Subchronic | Oral RfD Value | Oral RfD Units | Adjusted Dermal RfD | Dermal RfD Units | Primary Target Organ | Combined Uncertainty/ Modifying Factors | Sources of RfD: Target Organ | Dates of RfD: Target Organ (MM/DD/YYYY) |
| Antimony | Chronic | 4.0E-04 | mg/kg-day | 6.0E-05 | mg/kg-day | Circulatory | 1000/1 | IRIS | 03/26/01 |
| Lead | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Child Recreator | | | | | | | | | |
| Antimony | Subchronic | 4.0E-04 | mg/kg-day | 6.0E-05 | mg/kg-day | Circulatory | 1000/1 | HEAST | 7/31/97 |
| Lead | --- | --- | --- | --- | --- | --- | --- | --- | --- |

KEY

mg/kg-day

milligrams per kilogram a day

IRIS

Integrated Risk Information System

HEAST

Health Effects Assessment Tables

Reference:

Human Health Risk Assessment (Hill, 2002) tables 5.2, 5.9, 5.10a, 5.11a, and 5.13a.

| Table 5: TWA Soil concentrations based on Exposure Frequency and Fraction of Time Spent at the Site. | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| | EF_site | .1428 | .1428 | .1428 | .4285 | .4285 | .4285 | .7142 | .7142 | .7142 |
| | F_site | 0.1 | 0.25 | 0.5 | 0.1 | 0.25 | 0.5 | 0.1 | 0.25 | 0.5 |
| Resident | Pb_S Yard | Low Activity | | | Medium Activity | | | High Activity | | |
| RES01 | 414.2 | 428.28 | 449.41 | 484.61 | 456.45 | 519.82 | 625.44 | 484.61 | 590.24 | 766.27 |
| RES02 | 105.7 | 124.19 | 151.92 | 198.15 | 161.17 | 244.37 | 383.05 | 198.15 | 336.82 | 567.95 |
| RES03 | 110 | 128.43 | 156.07 | 202.14 | 165.29 | 248.21 | 386.43 | 202.14 | 340.36 | 570.71 |
| RES04 | 314.9 | 330.40 | 353.65 | 392.41 | 361.40 | 431.16 | 547.42 | 392.41 | 508.67 | 702.44 |
| RES05 | 114.3 | 132.67 | 160.22 | 206.14 | 169.40 | 252.05 | 389.81 | 204.14 | 343.89 | 573.48 |
| RES06 | 159.1 | 176.83 | 203.42 | 247.74 | 212.28 | 292.05 | 425.01 | 247.74 | 380.69 | 602.28 |
| RES07 | 97.9 | 116.50 | 144.40 | 190.91 | 153.70 | 237.41 | 376.92 | 190.91 | 330.42 | 562.94 |
| RES08 | 350.7 | 365.69 | 388.17 | 425.65 | 395.67 | 463.12 | 575.55 | 425.65 | 538.07 | 725.45 |
| RES09 | 1530 | 1528.14 | 1525.36 | 1520.71 | 1524.43 | 1516.07 | 1502.14 | 1520.71 | 1506.79 | 1483.57 |
| RES10 | 121 | 139.27 | 166.68 | 212.36 | 175.81 | 258.04 | 395.07 | 212.36 | 349.39 | 577.79 |
| RES11 | 413.5 | 427.59 | 448.73 | 483.96 | 455.78 | 519.20 | 624.89 | 483.96 | 589.66 | 765.82 |
| RES12 | 126.7 | 144.89 | 172.17 | 217.65 | 181.27 | 263.12 | 399.55 | 217.65 | 354.07 | 581.45 |
| RES13 | 141 | 158.99 | 185.96 | 230.93 | 194.96 | 275.89 | 410.79 | 230.93 | 365.82 | 590.64 |
| RES14 | 106.3 | 124.78 | 152.50 | 198.71 | 161.74 | 244.91 | 383.52 | 198.71 | 337.32 | 568.34 |
| RES15 | 59.4 | 78.55 | 107.28 | 155.15 | 116.85 | 203.04 | 346.67 | 155.16 | 298.79 | 538.19 |
| RES16 | 89 | 107.73 | 135.82 | 182.64 | 145.19 | 229.46 | 369.93 | 182.64 | 323.79 | 557.21 |
| RES17 | 72.5 | 91.46 | 119.91 | 167.32 | 129.39 | 214.73 | 356.96 | 167.32 | 309.55 | 546.61 |
| Average | 254.48 | 270.85 | 295.39 | 336.31 | 303.58 | 377.22 | 499.95 | 336.31 | 459.04 | 663.60 |

KEY

EF_site = exposure frequency onsite

PbS_yard = Average Soil Concentration, near home

F_site = Fraction of daily outdoor time spent onsite

TWA = time-weighted average

Table 6: Predicted Percent Above Criteria For Various Exposure Frequencies - IEUBK Model Default Ingestion Rates

| | | Low Activity | | | Medium Activity | | | High Activity | | |
|----------|---------------------------------|--------------|------|--------------------|-----------------|------|--------------------|---------------|------|--------------------|
| Resident | Average Yard Soil Concentration | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL |
| RES01 | 414.2 | 428.28 | 5.6 | 9.95 | 519.82 | 6.4 | 15.43 | 766.27 | 8.3 | 32.051 |
| RES02 | 105.7 | 124.19 | 2.8 | .31 | 244.37 | 4.0 | 2.243 | 567.95 | 6.8 | 18.593 |
| RES03 | 110 | 128.43 | 2.8 | .346 | 248.21 | 4.0 | 2.384 | 570.71 | 6.8 | 19.777 |
| RES04 | 314.9 | 330.40 | 4.7 | 5.315 | 431.16 | 5.6 | 10.595 | 702.44 | 7.8 | 28.476 |
| RES05 | 114.3 | 132.67 | 2.9 | .388 | 252.05 | 4.0 | 2.534 | 573.48 | 6.8 | 19.777 |
| RES06 | 159.1 | 176.83 | 3.3 | .865 | 292.05 | 4.4 | 3.662 | 602.28 | 7.0 | 21.033 |
| RES07 | 97.9 | 116.50 | 2.7 | .262 | 237.41 | 3.9 | 2.111 | 562.94 | 6.7 | 18.593 |
| RES08 | 350.7 | 365.69 | 5.1 | 6.826 | 463.12 | 5.9 | 12.013 | 725.45 | 8.0 | 30.218 |
| RES09 | 1530 | 1528.14 | 13.4 | 69.73 | 1516.07 | 13.3 | 69.73 | 1483.57 | 13.1 | 69.73 |
| RES10 | 121 | 139.27 | 3.0 | .434 | 258.04 | 4.1 | 2.693 | 577.79 | 6.9 | 19.77 |
| RES11 | 413.5 | 427.59 | 5.6 | 9.95 | 519.20 | 6.4 | 15.43 | 765.82 | 8.3 | 32.051 |
| RES12 | 126.7 | 144.89 | 3.0 | .0486 | 263.12 | 4.1 | 2.863 | 581.45 | 6.9 | 19.777 |
| RES13 | 141 | 158.99 | 3.1 | .648 | 275.89 | 4.3 | 3.237 | 590.64 | 7.0 | 21.033 |
| RES14 | 106.3 | 124.78 | 2.8 | .328 | 244.91 | 4.0 | 2.243 | 568.34 | 6.8 | 18.593 |
| RES15 | 59.4 | 78.55 | 2.4 | .092 | 203.04 | 3.6 | 1.307 | 538.19 | 6.5 | 17.475 |
| RES16 | 89 | 107.73 | 2.6 | .21 | 229.46 | 3.8 | 1.871 | 557.21 | 6.7 | 18.593 |
| RES17 | 72.5 | 91.46 | 2.5 | .135 | 214.73 | 3.7 | 1.562 | 546.61 | 6.6 | 17.475 |

KEY

Soil concentrations presented in mg/kg.

Assumes mass fraction of soil in indoor dust (MSD) is 70%.

BLL Blood lead level; target BLL = 10 µg/dl.

GM Geometric mean BLL (ug/dl).

TWA Time-weighted average

Low Activity 1 day/wk, 0.4 hours onsite

Medium Activity

High Activity

µg/dl

mg/kg

day/wk

3 days/wk, 1 hour onsite

5 days/wk, 2 hours onsite

micrograms per deciliter

milligrams per kilogram

days per week

Table 7: Predicted Percent Above Criteria For Various Exposure Frequencies - Additional Low Ingestion Rates

| | | Low Activity | | | Medium Activity | | | High Activity | | |
|----------|---------------------------------|--------------|------|--------------------|-----------------|------|--------------------|---------------|------|--------------------|
| Resident | Average Yard Soil Concentration | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL |
| RES01 | 414.2 | 428.28 | 6.5 | 17.475 | 519.82 | 7.4 | 25.253 | 766.27 | 9.7 | 45.01 |
| RES02 | 105.7 | 124.19 | 3.1 | .611 | 244.37 | 4.5 | 4.41 | 567.95 | 7.9 | 28.476 |
| RES03 | 110 | 128.43 | 3.2 | .686 | 248.21 | 4.6 | 4.41 | 570.71 | 7.9 | 28.476 |
| RES04 | 314.9 | 330.40 | 5.5 | 9.344 | 431.16 | 6.5 | 17.475 | 702.44 | 9.2 | 40.315 |
| RES05 | 114.3 | 132.67 | 3.2 | .727 | 252.05 | 4.6 | 4.692 | 573.48 | 8.0 | 30.218 |
| RES06 | 159.1 | 176.83 | 3.7 | 1.762 | 292.05 | 5.1 | 6.826 | 602.28 | 8.2 | 32.051 |
| RES07 | 97.9 | 116.50 | 3.0 | .515 | 237.41 | 4.5 | 3.895 | 562.94 | 7.9 | 28.476 |
| RES08 | 350.7 | 365.69 | 5.9 | 12.013 | 463.12 | 6.9 | 19.777 | 725.45 | 9.4 | 42.616 |
| RES09 | 1530 | 1528.14 | 15.6 | 81.015 | 1516.07 | 15.5 | 78.293 | 1483.57 | 15.3 | 78.293 |
| RES10 | 121 | 139.27 | 3.3 | .865 | 258.04 | 4.7 | 4.994 | 577.79 | 8.0 | 30.218 |
| RES11 | 413.5 | 427.59 | 3.5 | 16.422 | 519.20 | 7.4 | 25.253 | 765.82 | 9.7 | 45.01 |
| RES12 | 126.7 | 144.89 | 3.4 | .973 | 263.12 | 4.7 | 5.315 | 581.45 | 8.0 | 30.218 |
| RES13 | 141 | 158.99 | 3.5 | 1.231 | 275.89 | 4.9 | 6.023 | 590.64 | 8.1 | 30.218 |
| RES14 | 106.3 | 124.78 | 3.1 | .611 | 244.91 | 4.5 | 4.41 | 568.34 | 7.9 | 28.476 |
| RES15 | 59.4 | 78.55 | 2.6 | .168 | 203.04 | 4.1 | 2.534 | 538.19 | 7.6 | 26.822 |
| RES16 | 89 | 107.73 | 2.9 | .41 | 229.46 | 4.4 | 3.662 | 557.21 | 7.8 | 28.476 |
| RES17 | 72.5 | 91.46 | 2.7 | 2.62 | 214.73 | 4.2 | 3.044 | 546.61 | 7.7 | 26.822 |

KEY

Soil concentrations presented in mg/kg.

Assumes mass fraction of soil in indoor dust (MSD) is 70%.

BLL Blood lead level; target BLL = 10 µg/dl.

GM Geometric mean BLL (µg/dl).

TWA Time-weighted average

Low Activity 1 day/wk, 0.4 hours onsite

Medium Activity

High Activity

µg/dl

mg/kg

day/wk

3 days/wk, 1 hour onsite

5 days/wk, 2 hours onsite

micrograms per deciliter

milligrams per kilogram

days per week

Table 8: Predicted Percent Above Criteria For Various Exposure Frequencies - Additional Medium Ingestion Rates

| | | Low Activity | | | Medium Activity | | | High Activity | | |
|----------|---------------------------------|--------------|------|--------------------|-----------------|------|--------------------|---------------|------|--------------------|
| Resident | Average Yard Soil Concentration | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL |
| RES01 | 414.2 | 428.28 | 7.2 | 22.362 | 519.82 | 8.2 | 32.051 | 766.27 | 10.8 | 52.707 |
| RES02 | 105.7 | 124.19 | 3.4 | .973 | 244.37 | 5.0 | 6.412 | 567.95 | 8.8 | 35.995 |
| RES03 | 110 | 128.43 | 3.4 | 1.032 | 248.21 | 5.0 | 6.826 | 570.71 | 8.8 | 35.995 |
| RES04 | 314.9 | 330.40 | 6.1 | 13.617 | 431.16 | 7.2 | 23.767 | 702.44 | 10.2 | 47.492 |
| RES05 | 114.3 | 132.67 | 3.5 | 1.161 | 252.05 | 5.1 | 6.826 | 573.48 | 8.8 | 38.108 |
| RES06 | 159.1 | 176.83 | 4.1 | 2.693 | 292.05 | 5.6 | 9.95 | 602.28 | 9.1 | 40.315 |
| RES07 | 97.9 | 116.50 | 3.3 | .816 | 237.41 | 4.9 | 6.023 | 562.94 | 8.7 | 35.995 |
| RES08 | 350.7 | 365.69 | 6.5 | 16.422 | 463.12 | 7.6 | 26.822 | 725.45 | 10.4 | 50.06 |
| RES09 | 1530 | 1528.14 | 17.2 | 86.106 | 1516.07 | 17.1 | 83.628 | 1483.57 | 16.8 | 83.628 |
| RES10 | 121 | 139.27 | 3.6 | 1.307 | 258.04 | 5.1 | 7.268 | 577.79 | 8.9 | 38.108 |
| RES11 | 413.5 | 427.59 | 7.2 | 22.362 | 519.20 | 8.2 | 32.051 | 765.82 | 10.8 | 52.707 |
| RES12 | 126.7 | 144.89 | 3.7 | 1.472 | 263.12 | 5.2 | 7.739 | 581.45 | 8.9 | 38.108 |
| RES13 | 141 | 158.99 | 3.8 | 1.987 | 275.89 | 5.4 | 8.774 | 590.64 | 9.0 | 38.108 |
| RES14 | 106.3 | 124.78 | 3.4 | .973 | 244.91 | 5.0 | 6.412 | 568.34 | 8.7 | 35.995 |
| RES15 | 59.4 | 78.55 | 2.7 | .262 | 203.04 | 4.4 | 3.895 | 538.19 | 8.4 | 33.976 |
| RES16 | 89 | 107.73 | 3.1 | .648 | 229.46 | 4.8 | 5.315 | 557.21 | 8.7 | 35.995 |
| RES17 | 72.5 | 91.46 | 2.9 | .388 | 214.73 | 4.6 | 4.693 | 546.61 | 8.5 | 33.976 |

KEY

Soil concentrations presented in mg/kg.

Assumes mass fraction of soil in indoor dust (MSD) is 70%.

BLL

Blood lead level; target BLL = 10 µg/dl.

GM

Geometric mean BLL (µg/dl).

TWA

Time-weighted average

Low Activity

1 day/wk, 0.4 hours onsite

Medium Activity

High Activity

µg/dl

mg/kg

day/wk

3 days/wk, 1 hour onsite

5 days/wk, 2 hours onsite

micrograms per deciliter

milligrams per kilogram

days per week

Table 9: Predicted Percent Above Criteria For Various Exposure Frequencies - Additional High Ingestion Rates

| | | Low Activity | | | Medium Activity | | | High Activity | | |
|----------|---------------------------------|--------------|------|--------------------|-----------------|------|--------------------|---------------|------|--------------------|
| Resident | Average Yard Soil Concentration | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL | Soil TWA | GM | % above target BLL |
| RES01 | 414.2 | 428.28 | 11.5 | 58.21 | 519.82 | 13.1 | 69.73 | 766.27 | 17.0 | 83.628 |
| RES02 | 105.7 | 124.19 | 5.0 | 6.412 | 244.37 | 7.8 | 28.476 | 567.95 | 13.9 | 72.626 |
| RES03 | 110 | 128.43 | 5.1 | 6.826 | 248.21 | 7.9 | 28.476 | 570.71 | 13.9 | 72.626 |
| RES04 | 314.9 | 330.40 | 9.6 | 45.01 | 431.16 | 11.5 | 58.21 | 702.44 | 16.0 | 81.015 |
| RES05 | 114.3 | 132.67 | 5.2 | 7.739 | 252.05 | 7.9 | 30.218 | 573.48 | 14.0 | 72.626 |
| RES06 | 159.1 | 176.83 | 6.2 | 14.496 | 292.05 | 8.8 | 35.995 | 602.28 | 14.5 | 75.489 |
| RES07 | 97.9 | 116.50 | 4.8 | 5.315 | 237.41 | 7.6 | 26.822 | 562.94 | 13.8 | 72.626 |
| RES08 | 350.7 | 365.69 | 10.3 | 50.06 | 463.12 | 12.1 | 63.922 | 725.45 | 16.4 | 83.628 |
| RES09 | 1530 | 1528.14 | 26.1 | 96.819 | 1516.07 | 26.0 | 96.818 | 1483.57 | 25.6 | 96.818 |
| RES10 | 121 | 139.27 | 5.3 | 8.774 | 258.04 | 8.1 | 30.218 | 577.79 | 14.1 | 72.626 |
| RES11 | 413.5 | 427.59 | 11.5 | 58.21 | 519.20 | 13.1 | 69.73 | 765.82 | 17.0 | 83.628 |
| RES12 | 126.7 | 144.89 | 5.5 | 9.344 | 263.12 | 8.2 | 32.051 | 581.45 | 14.1 | 72.626 |
| RES13 | 141 | 158.99 | 5.8 | 12.013 | 275.89 | 8.5 | 33.976 | 590.64 | 14.3 | 75.488 |
| RES14 | 106.3 | 124.78 | 5.0 | 6.412 | 244.91 | 7.8 | 28.476 | 568.34 | 13.9 | 72.626 |
| RES15 | 59.4 | 78.55 | 3.8 | 1.871 | 203.04 | 6.9 | 19.777 | 538.19 | 13.4 | 69.73 |
| RES16 | 89 | 107.73 | 4.6 | 4.41 | 229.46 | 7.5 | 25.253 | 557.21 | 13.7 | 72.626 |
| RES17 | 72.5 | 91.46 | 4.1 | 2.863 | 214.73 | 7.1 | 22.362 | 546.61 | 13.5 | 69.73 |

KEY

Soil concentrations presented in mg/kg.

Assumes mass fraction of soil in indoor dust (MSD) is 70%.

BLL Blood lead level; target BLL = 10 µg/dl.

GM Geometric mean BLL (µg/dl).

TWA Time-weighted average

Low Activity 1 day/wk, 0.4 hours onsite

Medium Activity

High Activity

µg/dl

mg/kg

day/wk

3 days/wk, 1 hour onsite

5 days/wk, 2 hours onsite

micrograms per deciliter

milligrams per kilogram

days per week

| Table 10: Risk Characterization Summary - Non-Carcinogens: Youth Trespasser | | | | | | | | |
|------------------------------------------------------------------------------------|-----------------|----------------------------|---------------------|----------------------|----------------------------------|------------|---------|-----------------------|
| Scenario Timeframe: | | Current | | | | | | |
| Receptor Population: | | Trespasser | | | | | | |
| Receptor Age: | | Youth | | | | | | |
| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Hazard Quotient | | | |
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Soil | Soil/ hot spot | Soil Onsite-Direct Contact | Antimony | Circulatory | 1.0E 00 | N/A | 3.2E 00 | 1.4E+1 |
| Total Receptor Hazard Index | | | | | | | | 1.4E+1 |
| Total Circulatory Hazard Index | | | | | | | | 1.4E+1 |

Reference: Human Health Risk Assessment (Hill, 2002) table 10.2a.

| Table 11: Risk Characterization Summary - Non-Carcinogens: Adult Recreator | | | | | | | | |
|-----------------------------------------------------------------------------------|-----------------|----------------------------|---------------------|----------------------|----------------------------------|------------|---------|-----------------------|
| Scenario Timeframe: | | Future | | | | | | |
| Receptor Population: | | Recreational | | | | | | |
| Receptor Age: | | Adult | | | | | | |
| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Hazard Quotient | | | |
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Soil | Soil/ hot spot | Soil Onsite-Direct Contact | Antimony | Circulatory | 1.1E+1 | N/A | 1.2E 00 | 1.3E +1 |
| Total Receptor Hazard Index | | | | | | | | 1.3E +1 |
| Total Circulatory Hazard Index | | | | | | | | 1.3E +1 |

Reference: Human Health Risk Assessment (Hill, 2002) table 10.10a.

| Table 12: Risk Characterization Summary - Non-Carcinogens: Child Recreator | | | | | | | | |
|-----------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|
|-----------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|

| Scenario Timeframe: | | Future Recreator Child | | | | | | |
|------------------------------------------|-----------------|-------------------------------|---------------------|----------------------|----------------------------------|------------|---------|-----------------------|
| Receptor Population: | | | | | | | | |
| Receptor Age: | | | | | | | | |
| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Hazard Quotient | | | |
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Soil | Soil | Soil Onsite-Direct Contact | Antimony | Circulatory | 1.4E 00 | N/A | 2.7E-01 | 1.6E 00 |
| Soil | Soil/ hot spot | Soil Onsite-Direct Contact | Antimony | Circulatory | 4.0E+1 | N/A | 7.7E 00 | 4.8E+1 |
| Soil | Soil/Slag | Soil Onsite-Direct Contact | Antimony | Circulatory | 1.1E 00 | | 2.1E-01 | 1.3E 00 |
| Total Receptor Hazard Index–soils | | | | | | | | 1.6E 00 |
| Total Circulatory Hazard Index–soils | | | | | | | | 1.6E 00 |
| Total Receptor Hazard Index–hot spots | | | | | | | | 4.8E+1 |
| Total Circulatory Hazard Index–hot spots | | | | | | | | 4.8E+1 |
| Total Receptor Hazard Index–slag | | | | | | | | 1.3E 00 |
| Total Circulatory Hazard Index–slag | | | | | | | | 1.3E 00 |

Reference: Human Health Risk Assessment (Hill, 2002) tables 10.9a, 10.11a, and 10.13a.

Table 13: Detailed cost estimate for Alternative 4 - Stabilization and Offsite Disposal.

REMEDIAL ALTERNATIVE COST SUMMARY
ALTERNATIVE 4 - STABILIZATION AND OFFSITE DISPOSAL
RUSTON FOUNDRY
FEBRUARY 2002

| DESCRIPTION | QTY | UNIT | UNIT COST | TOTAL | WBS | PERCENTILE | COMMENTS |
|-----------------------------------------------------------|-------|-------------|------------|--------------|--------------|------------|------------------------------------|
| CAPITAL COSTS | | | | | | | |
| Mobilization | | | | | | | |
| Construction Equipment and Facilities | 1 | each | \$ 14,344 | \$ 14,344 | 331-01-01-00 | Median | |
| Mobilization of Personnel | 1 | each | \$ 7,039 | \$ 7,039 | 331-01-02-00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$ 7,780 | \$ 7,780 | 331-01-03-00 | Median | |
| Setup/construct Temporary Facilities | 1 | each | \$ 60,773 | \$ 60,773 | 331-01-04-00 | Median | |
| Monitoring, Sampling, Testing and Analysis | | | | | | | |
| Air Monitoring and Sampling | 1 | each | \$ 7,110 | \$ 7,110 | 331-02-03-00 | Median | |
| Soil Sampling | 120 | each | \$ 272 | \$ 32,633 | 331-02-05-00 | Median | 20 confirmation samples per acre |
| Laboratory Chemical Analysis | 120 | each | \$ 285 | \$ 34,185 | 331-02-09-00 | Median | 20 confirmation samples per acre |
| Site Work | | | | | | | |
| Demolition | 1800 | square yard | \$ 21 | \$ 37,784 | 331-03-01-00 | Median | |
| Cleaning and Grubbing | 6.6 | acre | \$ 5,609 | \$ 36,362 | 331-03-02-00 | Median | |
| Water Well Plug and Abandon | 1 | each | \$ 2,048 | \$ 2,048 | NA | NA | |
| Surface Water Collection and Control | | | | | | | |
| Erosion Control | 6.6 | acre | \$ 13,137 | \$ 86,702 | 331-05-13-00 | Median | |
| Air Pollution Collection and Containment | | | | | | | |
| Fugitive Dust/Vapor/Gas Emissions Control | 6.6 | acre | \$ 13,903 | \$ 91,758 | 331-07-04-00 | Median | |
| Solids Collection and Containment | | | | | | | |
| Contaminated Soil Collection | 16000 | cubic yard | \$ 10 | \$ 155,250 | 331-08-01-00 | Median | Excavate all contaminated material |
| Capping of contaminated area (soil/asphalt) | 0 | acre | \$ 301,862 | \$ - | 331-08-05-00 | 75th % | |
| Drums/Tanks/Structures/Misc Demolition and Removal | | | | | | | |
| Tank Removal | 1 | each | \$ 6,376 | \$ 6,376 | 331-10-02-00 | Median | Remove/Dispose of UST/Liquids |
| Structure Removal | 8808 | square foot | \$ 12 | \$ 106,137 | 331-10-03-00 | Median | Remove Buildings/Debris |
| Asbestos Abatement | 6000 | square foot | \$ 11 | \$ 67,620 | 331-10-04-00 | Median | Remove/Dispose Asbestos |
| Stabilization/Fixation/Encapsulation | | | | | | | |
| Pozzolan Process (Lime/Portland Cement) | 1300 | cubic yards | \$ 33 | \$ 42,718 | 331-15-04-00 | Median | Stabilize TCLP Waste |
| Disposal (Other than commercial) | | | | | | | |
| Landfill/Burial Ground/Trench/Pits | 0 | cubic yards | \$ 89 | \$ - | 331-18-01-00 | Median | Construct Containment Cell |
| Disposal (Commercial) | | | | | | | |
| Transport to Storage/Disposal Facility | 16000 | Ton | \$ 56 | \$ 896,350 | 331-19-21-00 | Median | RCRA D Facility |
| Disposal Fee and Taxes | 16000 | Ton | \$ 96 | \$ 1,443,000 | 331-19-22-00 | Median | RCRA D Facility |
| Transport to Disposal Facility | 0 | Ton | \$ 246 | \$ - | 331-19-21-00 | 75th % | |
| Disposal Fee and Taxes | 0 | Ton | \$ 214 | \$ - | 331-19-22-00 | 75th % | |
| Site Restoration | | | | | | | |
| Earthwork | 16000 | cubic yard | \$ 13 | \$ 191,250 | 331-20-01-00 | Median | Backfill Excavated Areas |
| Revegetation and Planting | 6.6 | acre | \$ 5,708 | \$ 37,671 | 331-20-04-00 | Median | Revegetate Excavated Areas |
| Demobilization | | | | | | | |
| Removal of Temporary Facilities | 1 | each | \$ 5,288 | \$ 5,288 | 331-21-01-00 | Median | |
| Removal of Temporary Utilities | 1 | each | \$ 2,574 | \$ 2,574 | 331-21-02-00 | Median | |
| Final Decontamination | 1 | each | \$ 21,715 | \$ 21,715 | 331-21-03-00 | Median | |
| Demobilization of Construction Equipment | 1 | each | \$ 8,570 | \$ 8,570 | 331-21-04-00 | Median | |
| Demobilization of Personnel | 1 | each | \$ 5,997 | \$ 5,997 | 331-21-05-00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$ 4,701 | \$ 4,701 | 331-21-06-00 | Median | |
| SUBTOTAL | | | | \$ 3,355,893 | | | |
| Contingency | | 25% | | \$ 838,923 | | | 10% scope + 15% bid |
| SUBTOTAL | | | | \$ 4,194,816 | | | |
| Project Management | | 5% | | \$ 209,731 | | | |
| Remedial Design | | 8% | | \$ 335,589 | | | |
| Construction Management | | 6% | | \$ 251,677 | | | |
| Institutional Controls Plan | 0 | each | \$ 5,000 | \$ - | | | |
| Site Information Database | 1 | each | \$ 4,800 | \$ 4,800 | | | |
| TOTAL CAPITAL COST | | | | \$ 4,996,393 | | | |

Table 13: continued.

REMEDIAL ALTERNATIVE COST SUMMARY
ALTERNATIVE 4 - STABILIZATION AND OFFSITE DISPOSAL
RUSTON FOUNDRY
FEBRUARY 2002

| DESCRIPTION | QTY | UNIT | UNIT COST | TOTAL | COMMENTS | |
|---------------------------------------|--------|--------------|---------------------|----------------------|--------------------------------------|----------|
| ANNUAL O&M COSTS | | | | | | |
| Site Monitoring | | | | | | |
| Surface Water Sampling | 0 | quarter | \$ 1,000 | \$ - | Estimated Unit Cost | |
| Surface Water Lab Analysis | 0 | quarter | \$ 1,200 | \$ - | Estimated Unit Cost | |
| Groundwater Sampling | 0 | quarter | \$ 1,000 | \$ - | Estimated Unit Cost | |
| Groundwater Lab Analysis | 0 | quarter | \$ 1,200 | \$ - | Estimated Unit Cost | |
| Site Maintenance | | | | | | |
| Mowing | 0 | months | \$ 200 | \$ - | | |
| SUBTOTAL | | | | \$ - | | |
| Contingency | | 30% | | \$ - | 10% scope + 20% bid | |
| SUBTOTAL | | | | \$ - | | |
| Project Management | | 5% | | \$ - | | |
| Technical Support | | 10% | | \$ - | | |
| Institutional Controls | 0 | each | \$ 3,800 | \$ - | | |
| TOTAL ANNUAL O&M COSTS | | | | \$ - | | |
| DESCRIPTION | QTY | UNIT | UNIT COST | TOTAL | COMMENTS | |
| PERIODIC COSTS | | | | | | |
| Year 0 | | | | | | |
| 5-Year Review report | 0 | each | \$ 25,000 | \$ - | 1 Report End of Year 5 | |
| Well Abandonment | 5 | each | \$ 480 | \$ 2,300 | 180 ft @ \$10/ft + \$800 mobil/demob | |
| Contingency (% of sum) | | 25% | | \$ 575 | % of construction activities | |
| Project Management (% of sum + const) | | 5% | | \$ 144 | % of construction + contingency | |
| Remedial Action Report | 1 | each | \$ 8,000 | \$ 8,000 | | |
| | | | Subtotal | \$ 11,019 | | |
| Year 5 | | | | | | |
| 5-Year Review report | 0 | each | \$ 15,000 | \$ - | 1 Report End of Year 10 | |
| Update Institutional Controls Plan | 0 | each | \$ 2,800 | \$ - | 1 Report End of Year 10 | |
| | | | Subtotal | \$ - | | |
| Year 10 | | | | | | |
| 5-Year Review report | 0 | each | \$ 15,000 | \$ - | 1 Report End of Year 15 | |
| Update Institutional Controls Plan | 0 | each | \$ 2,800 | \$ - | 1 Report End of Year 15 | |
| | | | Subtotal | \$ - | | |
| Year 15 | | | | | | |
| 5-Year Review report | 0 | each | \$ 15,000 | \$ - | 1 Report End of Year 20 | |
| Update Institutional Controls Plan | 0 | each | \$ 2,800 | \$ - | 1 Report End of Year 20 | |
| | | | Subtotal | \$ - | | |
| Year 20 | | | | | | |
| 5-Year Review report | 0 | each | \$ 15,000 | \$ - | 1 Report End of Year 25 | |
| Update Institutional Controls Plan | 0 | each | \$ 2,800 | \$ - | 1 Report End of Year 25 | |
| | | | Subtotal | \$ - | | |
| Year 25 | | | | | | |
| 5-Year Review report | 0 | each | \$ 15,000 | \$ - | 1 Report End of Year 30 | |
| Well Abandonment | 0 | each | \$ 480 | \$ - | 180 ft @ \$10/ft + \$800 mobil/demob | |
| Contingency (% of sum) | | 25% | | \$ - | % of construction activities | |
| Project Management (% of sum + const) | | 5% | | \$ - | % of construction + contingency | |
| Remedial Action Report | 0 | each | \$ 8,000 | \$ - | | |
| | | | Subtotal | \$ - | | |
| TOTAL PERIODIC COSTS | | | | \$ 11,019 | | |
| DESCRIPTION | YR | TOTAL COST | TOTAL COST PER YEAR | DISCOUNT FACTOR (7%) | PRESENT VALUE | COMMENTS |
| PRESENT VALUE ANALYSIS | | | | | | |
| Capital Cost | 0 | \$ 4,996,393 | \$ 4,996,393 | 1.000 | \$ 4,996,393 | |
| Annual O&M Cost | 1 to 2 | \$ - | \$ - | 1.808 | \$ - | |
| Periodic Cost | 0 | \$ 11,019 | \$ 11,019 | 1.000 | \$ 11,019 | |
| Periodic Cost | 10 | \$ - | \$ - | 0.508 | \$ - | |
| Periodic Cost | 15 | \$ - | \$ - | 0.382 | \$ - | |
| Periodic Cost | 20 | \$ - | \$ - | 0.258 | \$ - | |
| Periodic Cost | 25 | \$ - | \$ - | 0.184 | \$ - | |
| Periodic Cost | 30 | \$ - | \$ - | 0.131 | \$ - | |
| SUBTOTAL | | \$ 5,007,412 | | | \$ 5,007,412 | |

Table 14 - Cleanup Levels for Chemicals of Concern**Media:** Soil**Site Area:** Waste Area**Available Use:** Recreational/Commercial**Controls to Ensure Restricted Use (if applicable):** N/A

| Chemical of Concern | Cleanup Level | Basis for Cleanup Level | Risk At Cleanup Level |
|---------------------|------------------------|--------------------------------------------|--------------------------------------|
| Antimony | 150 mg/kg ¹ | Risk Assessment | HI = 1 |
| Lead | 500 mg/kg ¹ | Risk Assessment | < 5% exceed 10µg/dl blood lead level |
| Antimony | LA SPLP ² | LA criteria for protection of ground water | N/A |
| Lead | LA SPLP ² | LA criteria for protection of ground water | N/A |

Notes

1 - cleanup levels presented in this table are based on the risk associated with exposure to soil contamination through direct contact and ingestion by future onsite recreators.

2 - soil that exceeded the Louisiana screening criteria for concentrations protective of ground water

The purpose of this response action is to control risks posed by direct contact with soil and to minimize migration of contaminants to ground water. The results of the baseline risk assessment indicate that existing conditions at the Site pose a noncarcinogenic health concern due to antimony exceeding a HI of 1. The Site also poses a risk to children due to the concentration of lead at levels that could result in a greater than 5% chance of exceeding 10µg/dl blood lead level. This remedy shall address all soils contaminated with antimony in excess of 150 mg/kg and lead in excess of 500 mg/kg.

Table 15: Location-Specific ARARs.

| Federal | |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement | Justification |
| Executive Order on Floodplain Management, Order No. 11988 | Requires all federal agencies and associates to avoid long- and short-term adverse impacts associated with occupancy and modification of floodplains. Any actions taken to reduce the risk or impact of remedial actions should accomplish the following: (1) Reduce the risk of flood loss. (2) Minimize the impacts of floods on human safety, health, and welfare. (3) Restore and preserve the natural and beneficial values served by floodplains. This requirement is applicable only if the site lies within the 100-year floodplain or the remedy impacts a 100-year floodplain. The Ruston Foundry Site lies within a 100-year floodplain and this order is applicable to the Site. |
| Fish and Wildlife Coordination Act 16 USC § 661 et seq. 16 USC § 742 a 16 USC § 2901 | Requires consultation when a modification of a stream or other water body is proposed or authorized and requires adequate provision for protection of fish and wildlife resources. Relevant and appropriate to Ruston Foundry Site for removal of contaminated soils along the Chatlin Lake Canal and Mill Street Ditch. |
| Archeological and Historic Preservation Act 16 USC § 469 40 CFR § 6.301© | Establishes procedures to provide for preservation of scientific, historical, and archeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. If scientific, historical, or archaeological artifacts are discovered at the site, work in the area of the Site affected by such discovery will be halted pending the completion of any data recovery and preservation activities required pursuant to the act and its implementing regulations. Would be applicable at Ruston Foundry Site during the remedial activities if scientific, historic, or archeological artifacts are identified during implementation of the remedy. |
| Endangered Species Act 16 USC § 1531 et. seq. 50 CFR Part 402. | Requires that proposed action minimize impacts on endangered species within critical habitats upon which endangered species depend, including consulting with Department of Interior. Endangered or threatened species have not been identified at the Site; however, the Act may be an applicable ARAR for the Ruston Foundry Site if endangered species are identified during remedial action. |
| State | |

Louisiana Historical Preservation Act
RS 36:208

The Ruston Foundry Site would be archaeologically significant and this Act would be applicable if remains were discovered that yield information about the nations history or prehistory.

Table 16: Contaminant-Specific ARARs.

| Federal | |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement | Justification |
| Clean Air Act (CAA) 40 CFR Part 61 | The CAA is the primary federal legislation protecting air quality. National Primary and Secondary Ambient Air Quality Standards (NAAQS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and the New Source Performance Standards (NSPS) are promulgated by the EPA under the CAA. Relevant and appropriate to Ruston Foundry. |
| National Primary and Secondary Air Quality Standards (NAAQS) 40 CFR, Part 50 | The NAAQS specify the maximum concentration of a federally regulated air pollutant (i.e., SO ₂ , particulate matter (PM ₁₀), NO ₂ , CO, ozone, and lead) in an area resulting from all sources of that pollutant. No new construction or modification of a facility, structure or installation may emit an amount of any criteria pollutant that will interfere with the attainment or maintenance of a NAAQS (see 40 CFR § 51.160). For the federal NAAQS, all measurements of air quality are corrected to a reference temperature of 25EC and to a reference pressure of 760mm Hg (1,013.2 millibars). 40 C.F.R. § 50.3. May be applicable during the excavation and demolition activities at Ruston Foundry. |
| Solids | |
| Hazardous substances 40 CFR Part 116.3 and 116.4 | Establishes reporting requirements for certain discharges of reportable quantities of hazardous substances. Creates no substantive clean up requirement. May be relevant and appropriate to the Ruston Foundry Site based on the chosen remedial alternative and if discharges of reportable quantities of hazardous substances occur during implementation of the remedy. |
| State | |
| Solids - To be Considered | |
| Hazardous Waste determination 33 LAC:V.1103 | Guidelines for generators to determine if a solid waste is a hazardous waste. Applicable to the soils to be excavated at Ruston Foundry, which may or may not be hazardous by characteristic. |

Table 17: Action-Specific ARARs.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Federal | |
| Air | |
| Toxic Substances Control Act (TSCA) Asbestos Abatement Projects 40 CFR §763.121 | Specifies operational and personal protection requirements for asbestos abatement workers not covered under 29 CFR 1925.58 or under an OSHA-approved state asbestos abatement plan. May be relevant and appropriate to the Ruston Foundry Site. |
| Clean Air Act (CAA) §112 40 CFR Part 61 | Specifies asbestos and inorganic arsenic as hazardous air pollutants. The asbestos requirement would be applicable to the Ruston Foundry Site during the abatement activities. The inorganic arsenic requirements are for facilities not sufficiently similar to Ruston Foundry and therefore are not ARARs. |
| National Emission Standards for Hazardous Air Pollutants (NESHAPs) Standards for Asbestos Abatement 40 CFR Part 61.147 and 61.156 | Provides procedures for controlling the emissions of asbestos during demolition and disposal activities. These requirements would be applicable to the Ruston Foundry Site during asbestos abatement activities. |
| Asbestos Standards for Demolition and Renovation 40 CFR Part 61.145 | Specifies national standards for asbestos abatement during demolition or renovation. Applicable to Ruston Foundry during removal of asbestos-containing materials. |
| Prevention of Significant Deterioration of Air Quality 42 USC § 7475 40 CFR § 52.21 | These provisions impose various requirements (e.g., use of best available control technology) on any new major stationary source of a federally regulated air pollutant in an area that has been designated attainment or unclassifiable for that pollutant. A "major stationary source" is a source listed in 40 CFR § 52.21 that emits, or has the potential to emit, 100 tons per year of a federally regulated air pollutant or any non-listed source that emits, or has the potential to emit, 250 tons per year of a federally regulated air pollutant. Activities at Ruston Foundry are not expected to constitute a major stationary source of any federally regulated air pollutant, but this requirement is relevant and appropriate. |
| Water | |

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Stormwater Regulations 40 CFR Parts 122, 125</p> | <p>National Pollution Discharge Elimination System (NPDES) permits are addressed relative to stormwater discharges associated with industrial activity. These regulations require the development and implementation of a stormwater pollution prevention plan or a stormwater best management plan. Monitoring and reporting requirements for a variety of facilities are outlined. Runoff from construction activities at the Ruston Foundry Site would make this an applicable requirement depending on the nature of the remedial action selected.</p> |
| <p>Soils/Solids</p> | |
| <p>Toxic Substances and Control Act (TSCA) Regulations Regarding the Disposal of Polychlorinated Biphenyls (PCBs) 40 CFR Part 761</p> | <p>Requires that all PCBs in concentrations greater than 500 parts per million (ppm) be disposed of by incineration, and PCBs in concentrations between 50 ppm and 500 ppm may be disposed of by incineration or in a chemical waste landfill as defined at 40 CFR 761.75. These requirements are applicable to the Ruston Foundry Site.</p> |
| <p>Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities 40 CFR Part 264 Subparts B, C, D and G</p> | <p>Subparts B, C, and D establish minimum standards that define the acceptable management of hazardous waste for owners and operators of facilities that treat, store, or dispose of hazardous waste. Subpart G establishes standards for closure and postclosure care for site design and operation. These standards will be relevant and appropriate to Ruston Foundry if wastes onsite are identified as RCRA hazardous wastes or are sufficiently similar to RCRA hazardous wastes.</p> |
| <p>Use and Management of Containers Tank Systems 40 CFR Part 264 Subparts I and J</p> | <p>Subpart I sets operating and performance standards for container storage of hazardous waste. These requirements would be relevant and appropriate to Ruston Foundry for containers used for storage of liquids, soil, or other wastes as part of the remedial action. Subpart J outlines similar standards but applies to tanks rather than containers.</p> |

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Land Disposal Restrictions (LDRs) 40 CFR Part 268 Subpart C - Prohibitions on Land Disposal Subpart D - Treatment Standards | 40 CFR Part 268 establishes restrictions on land disposal unless treatment standards are met or a "no migration exemption" is granted. LDRs establish prohibitions, treatment standards, and storage limitations before disposal for certain wastes as set forth in Subparts C and D. Treatment standards are expressed as either concentration-based performance standards or as specific treatment methods. Wastes must be treated according to the appropriate standard before wastes or the treatment residuals of wastes may be disposed in or on the land. The Universal Treatment Standards (UTS) establish a concentration limit for 300 regulated constituents in soil regardless of waste type. The LDRs are applicable to Ruston Foundry. |
| Requirements for Identification and Listing of Hazardous Wastes 40 CFR Part 261 | These regulations establish the requirements for the identification and listing of hazardous wastes. These requirements are applicable to the Ruston Foundry Site and would require that potential hazardous wastes be tested for identification and listed if appropriate. |
| Standards Applicable to Generators and Transporters of Hazardous Waste 40 CFR Part 262 and Part 263 | Part 262 establishes the record keeping requirements and manifesting requirements for the transport of hazardous wastes. Part 263 establishes requirements for the transport of hazardous wastes. These requirements would be applicable to the Ruston Foundry Site if hazardous wastes are shipped offsite for disposal. |
| Department of Transportation Requirements Governing the Transportation of Hazardous Materials 49 CFR Parts 107 and 171-179 | Establishes the requirements for the transportation of hazardous materials as defined by the U. S. Department of Transportation. These requirements would be applicable to the Ruston Foundry Site if hazardous materials are transported offsite for disposal. |
| Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs), and Requirements for Out-of-Service Underground Storage Tank Systems and Closure 40 CFR 280 Subpart G | Establishes the requirements for closure and corrective action related to the removal of UST systems. These requirements would be relevant and appropriate for the removal of the UST at the Ruston Foundry Site. |
| State | |
| Air | |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control of Fugitive Emissions 33 LAC:III.1305 | Requires that all reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including use of water or chemicals for control of dust in the demolition of existing structures, construction operations, clearing of land, and on dirt roads or stockpiles. Applicable during the demolition of buildings, excavation and transport of soils, or any other activity that may generate airborne particulate matter at Ruston Foundry. |
| Monitoring Well Abandonment and Sealing of Bore Holes 33 LAC:V.3323 | Specifies abandonment procedures and requirements for abandonment approval. Applicable to Ruston Foundry Site during the abandonment of the monitoring wells installed onsite. |
| Louisiana Department of Transportation and Development -Water Well Enforcement Program (Construction and Plugging Standards) RS:3091-3098.8 | Specifies standards for construction and plugging of water wells to minimize chances of contaminating groundwater resources via improper construction or abandonment of water wells and minimize health and safety hazards associated with construction of water wells and with unplugged or improperly abandoned wells and holes. Applicable to Ruston Foundry Site for the abandonment of the existing water well. |
| Surface Water Criteria 33 LAC:XI.1113 | Outlines surface water quality criteria for the state of Louisiana to promote restoration, maintenance, and protection of state waters and wetlands. Applicable to the Chatlin Lake Canal, and Mill Street Ditch. |
| Solids | |
| Temporary Units 33 LAC:V.2603 | Definition and requirements associated with Temporary Units designated at a facility. May be applicable if hazardous soils at Ruston Foundry are temporarily stored onsite prior to disposal. |
| Corrective Action 33 LAC:V.3322 | States that the owner or operator of a facility for the treatment, storage, or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment both onsite and offsite for all releases of hazardous wastes or constituents from any solid waste management unit. Applicable to Ruston Foundry if the remedy results in an onsite or offsite release of hazardous wastes or constituents from a waste management unit. |

| | |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manifest Requirements 33 LAC:V.903 | Required information for manifest forms for shipments of hazardous waste within the state of Louisiana. Applicable if hazardous soils at Ruston Foundry are shipped to an offsite disposal facility. |
| Manifest Document Flow 33 LAC:V.913 | Outlines manifest document flow and procedures from the generator, transporter, and hazardous waste facility operator. Applicable if hazardous soils at Ruston Foundry are shipped to an offsite disposal facility. |
| EPA Identification Numbers 33 LAC:V.1105 | EPA identification number requirements for generators, a generator must not treat, store, dispose of, transport or offer for transportation hazardous waste without receiving an active EPA identification number. Relevant and appropriate to Ruston Foundry if disposing onsite or transporting hazardous soils offsite. |
| The Manifest System 33 LAC:V.1107 | Specific manifest requirements for generators of hazardous waste. Applicable to Ruston Foundry if hazardous soils are shipped offsite. |
| Manifest System Emergency Response Information 33 LAC:V.1108 | Generators must provide guidelines for an emergency situation involving the hazardous waste to accompany the manifest. Applicable to Ruston Foundry if hazardous soils are shipped offsite. |
| Pre-Transport Requirements 33 LAC:V.1109 | Packaging, labeling, and other requirements for generators prior to shipment of hazardous wastes. Applicable to Ruston Foundry if hazardous soils are shipped offsite. |
| Standards Regulating Permanent Closure and Change-in-service of USTs LAC 33:XI.905 | Establishes the requirements for closure and corrective action related to the removal of UST systems. These requirements would be relevant and appropriate for the removal of the UST at the Ruston Foundry Site. |
| To Be Considered | |
| Standards Governing Industrial Solid Waste Generators 33 LAC:VII.701.B | States requirements for generator notification and waste testing confirming waste is not a characteristic or listed hazardous waste as defined by 33 LAC:Part V or by federal regulations. May be applicable to Ruston Foundry if industrial solid wastes are shipped offsite for disposal. |

Figure 1: City Map

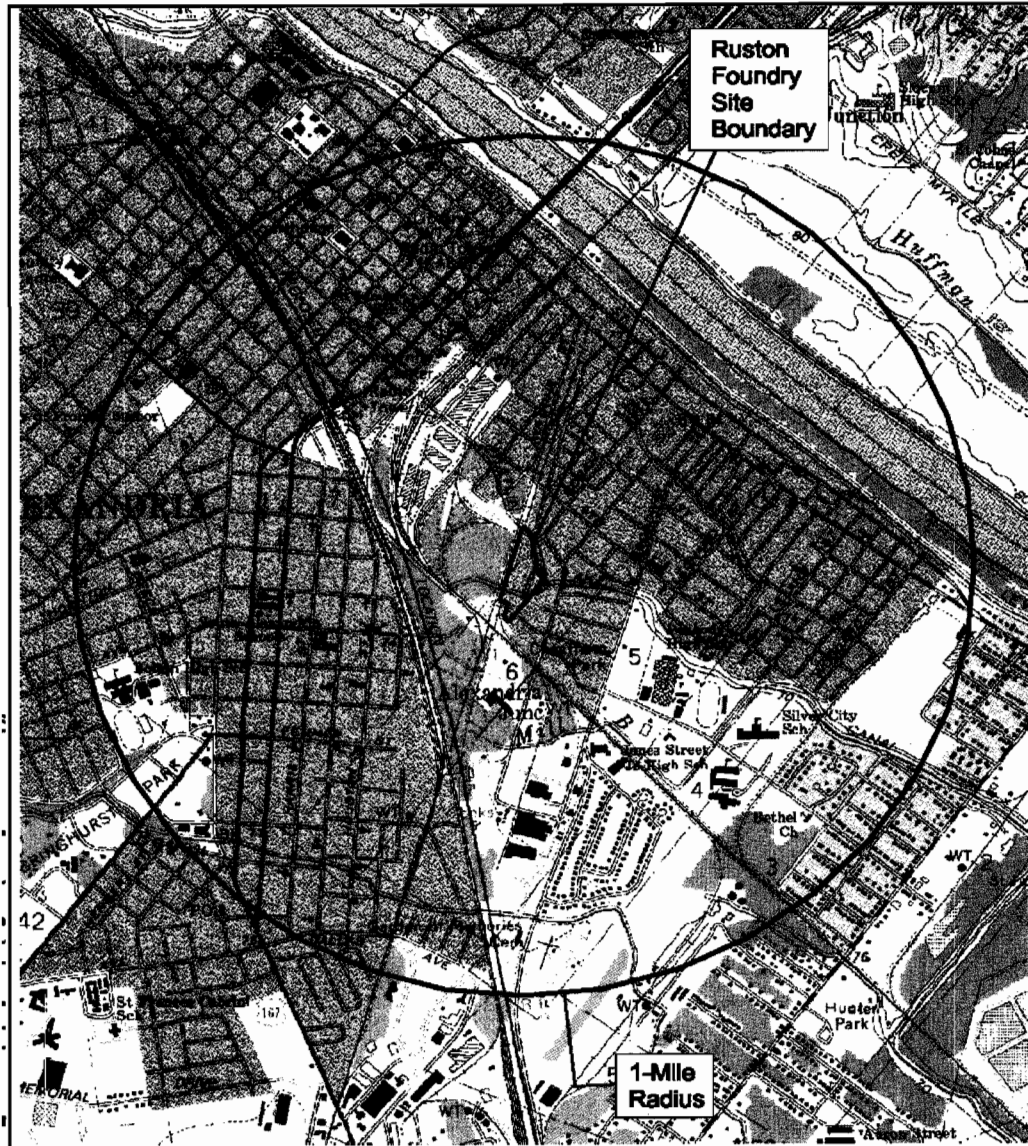


Figure 2: Site Map

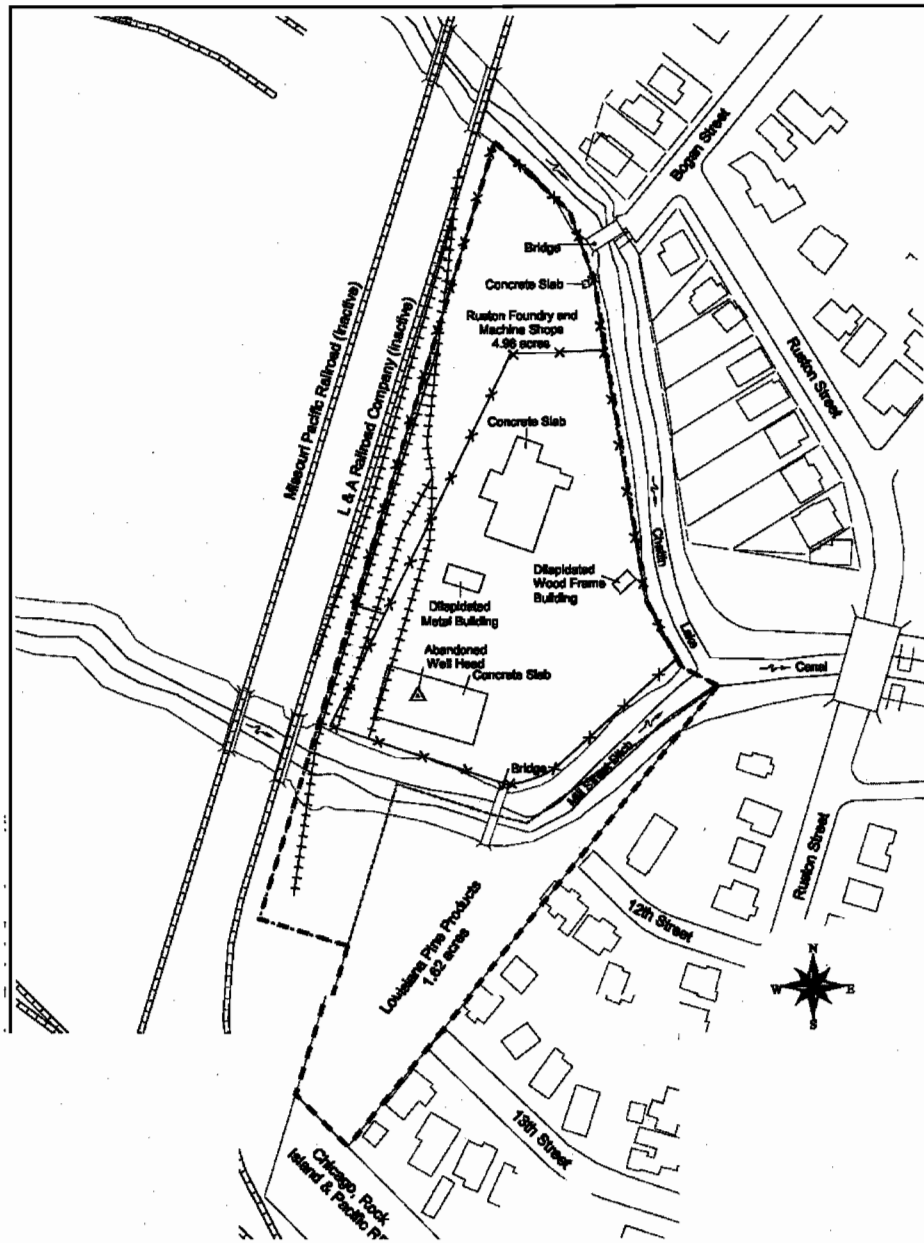


Figure 3: Stratigraphic Section

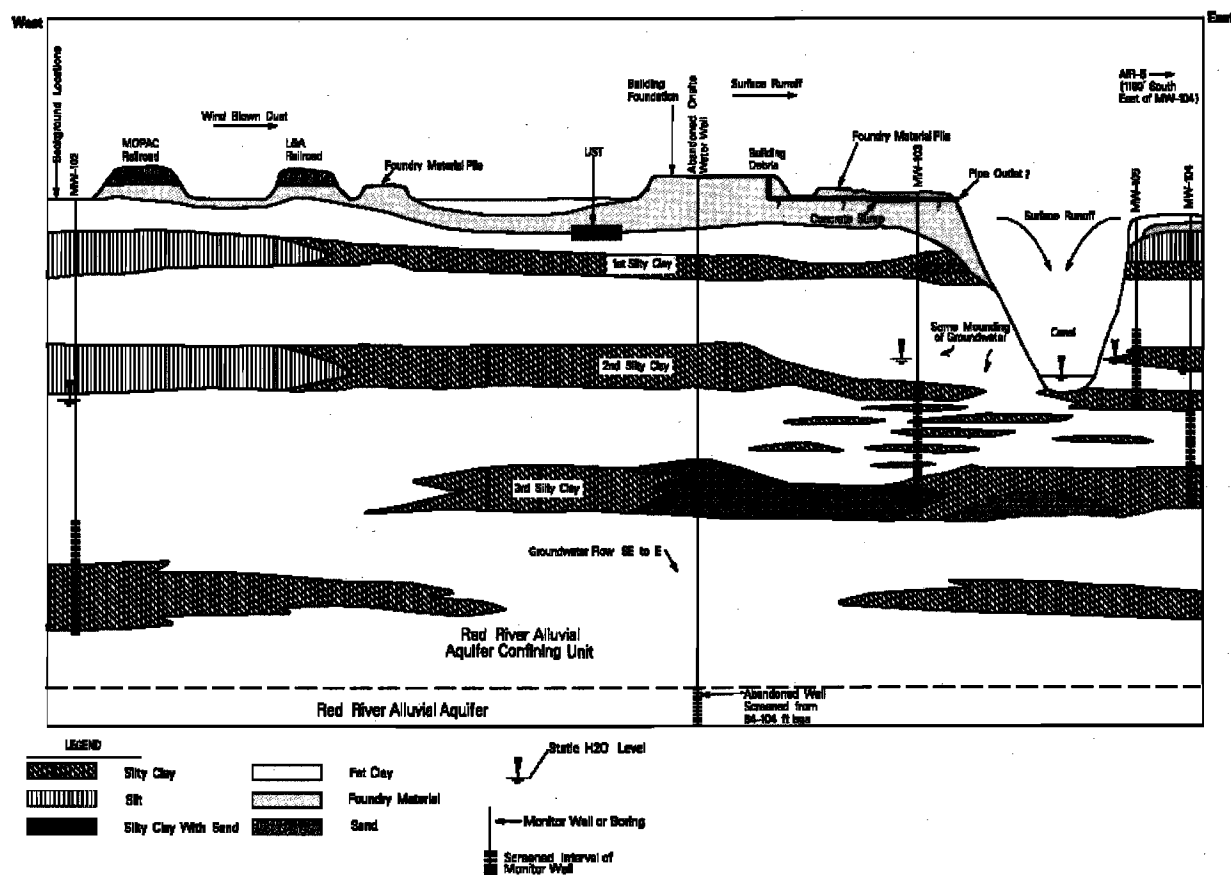
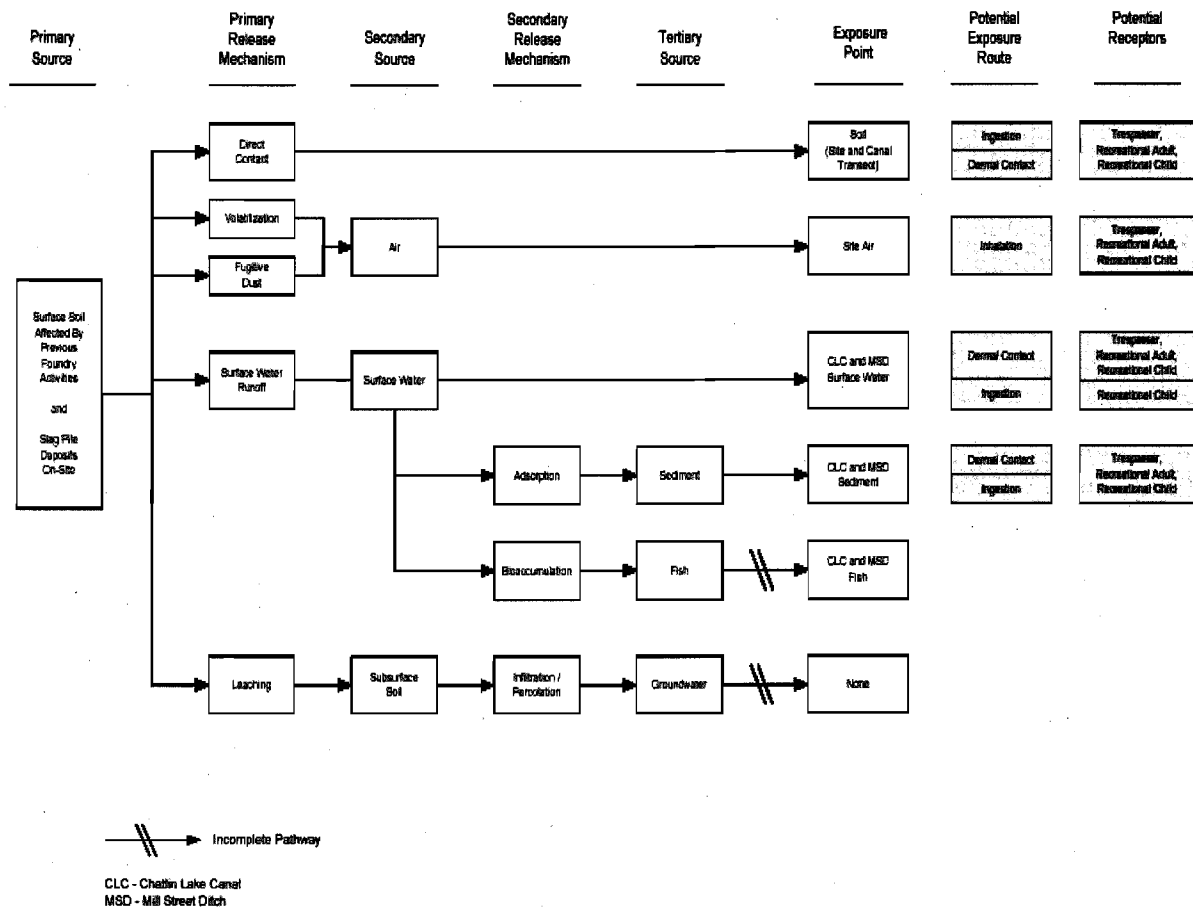


Figure 4: Conceptual Site Model



**Appendix A: Record of Communication from
Louisiana Department of Environmental Quality**



State of Louisiana

Department of Environmental Quality



M.J. "MIKE" FOSTER, JR.
GOVERNOR

J. DALE GIVENS
SECRETARY

June 17, 2002

Ms. Katrina Coltrain, Remedial Project Manager
6SF-LP
US EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

RE: Ruston Foundry Site, CERCLIS #: LAD 985 185 107; AI 12443
Bogan Street, Alexandria, Rapides Parish, Louisiana
Draft Record Of Decision dated June 4, 2002

Dear Ms. Coltrain:

The Louisiana Department of Environmental Quality – Remediation Services Division (LDEQ-RSD) has reviewed the Draft Record of Decision dated June 4, 2002.

The LDEQ-RSD supports the remedy selected (Alternative 4) and described in the Draft Record of Decision dated June 4, 2002, and offers the following comment:

1. On Page 30 of 34 of the Draft ROD, tenth bullet item: "The excavated areas will be backfilled with clean fill and compacted".

There did not appear to be any reference to confirmatory sampling from soils left in place in order to verify that the goals of the alternative have been accomplished. Possibly a statement could be inserted that explains that **confirmatory samples** will be obtained from the soils remaining (prior to backfilling and compacting) to ensure that the concentration of antimony has been reduced 150 mg/kg and/or less than the LA SPLP; and that confirmatory samples will be obtained from the soils remaining (prior to backfilling and compacting) to ensure that the concentration of lead has been reduced to 500 mg/kg and/or less than the LA SPLP.

Thank you for allowing us to comment on this draft Record of Decision (ROD). If you have any questions, please call me at 225-765-0479 or email at nora_l@ldeq.org.

Sincerely,

Nora Lane, Environmental Scientist
Remediation Services Division

nl

c: LDEQ File Scanning Room 1400- IAS

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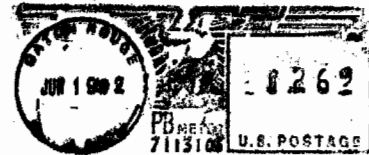
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BATON ROUGE, LOUISIANA 70884-2178

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MS KATRINA COLTRAIN
6SF-LP
US EPA - REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202

E-FNNM3 75202



Appendix B: Administrative Record Index

•

Prepared for
United States Environmental Protection Agency

Region 6

FINAL
ADMINISTRATIVE RECORD INDEX

for

RUSTON FOUNDRY
SUPERFUND SITE

EPA ID No. LAD985185107

ESS II
Task Order No. 083-017

Katrina Coltrain
Remedial Project Manager
U.S. EPA Region 6

Prepared by:

TechLaw, Inc.
750 N. St. Paul Street, Suite 600
Dallas, Texas 75201

June 28, 2002



175329

PREAMBLE

The purpose of this document is to provide the public with an index to the Administrative Record (AR) for a U.S. Environmental Protection Agency's (EPA) selected remedial action to respond to conditions at the Ruston Foundry Superfund site (the "Site"). EPA's remedial action is authorized by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601 et seq.

Section 113 (j)(1) of CERCLA, 42 U.S.C. Section 9613 (j)(1), provides that judicial review of the adequacy of a CERCLA response action shall be limited to the administrative record. Section 113 (k)(1) of CERCLA, 42 U.S.C. Section 9613 (k)(1), requires the EPA to establish an administrative record upon which it shall base the selection of its remedial actions. As the EPA decides what to do at the site of a release of hazardous substances, it compiles documents concerning the site and the EPA's decision into an "administrative record file." This means that documents may be added to the administrative record file from time to time. Once the EPA Regional Administrator or the Administrator's delegate signs the Record of Decision memorializing the selection of the action, the documents which form the basis for the selection of the response action are then known as the "administrative record."

Section 113(k)(1) of CERCLA requires the EPA to make the administrative record available to the public at or near the site of the response action. Accordingly, the EPA has established a repository where the record may be reviewed near the Site at:

Rapids Parish Library
411 Washington Street
Alexandria, LA 71301
(318) 442 -1840

The public may also review the administrative record at the EPA Region 6 offices in Dallas, Texas, by contacting the Remedial Project Manager at the address listed below. The record is available for public review during normal business hours. The record is treated as a non-circulating reference document. Any document in the record may be photocopied according to the procedures used at the repository or at the EPA Region 6 offices. This index and the record were compiled in accordance with the EPA's Final Guidance on Administrative Records for Selecting CERCLA Response Actions, Office of Solid Waste and Emergency Response (OSWER) Directive Number 9833.3A-1 (December 3, 1990).

Documents listed as bibliographic sources for other documents in the record might not be listed separately in the Site index. Where a document is listed in the Site index but not located among

the documents which EPA has made available in the repository, EPA will, upon request, include the document in the repository or make the document available for review at an alternate location. This applies to documents such as verified sampling data, chain of custody forms, guidance and policy documents, as well as voluminous site-specific reports. Copies of guidance documents also can be obtained by calling the RCRA/Superfund/Title 3 Hotline at (800) 424-9346. Documents in EPA's confidential file are not available for review.

These requests should be addressed to :

Katrina Coltrain
Remedial Project Manager
U.S. EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 665- 8143

The documents included in the AR index are arranged predominantly in chronological order. The AR index helps locate and retrieve documents in the file. It also provides an overview of the response action history. The index includes the following information for each document:

- **Doc ID** - The document identifier number.
- **Date** - The date the document was published and/or released. "01/01/2525" means no date was recorded.
- **Pages** - Total number of printed pages in the document, including attachments.
- **Title** - Descriptive heading of the document.
- **Document Type** - General identification, (e.g. correspondence, Remedial Investigation Report, Record of Decision.)
- **Author** - Name of originator, and the name of the organization that the author is affiliated with. If either the originator name or the organization name is not identified, then the field is captured with the designation "None".
- **Addressee** - Name and affiliation of the addressee. If either the originator name or the organization name is not identified, then the field is captured with the designation "None".

NOTE TO READER

In accordance with the EPA'S Final Guidance on Administrative Records for Selecting CERCLA Response Actions, Office of Solid Waste and Emergency Response (OSWER) Directive Number 9833.3A-1 (December 3, 1990), data that support EPA's Presumptive Remedy for Metals-In-Soil Sites, OSWER Directive 9355.0-72FS (September 1999) are not physically present in the administrative record file located at the repository. The data are part of the administrative record for the Record of Decision, and may be reviewed upon request by contacting the Remedial Project Manager, Ms. Katrina Coltrain at (214) 665-8143.

The Presumptive Remedy guidance can be located at:

<http://www.epa.gov/oerrpage/superfund/resources/presump/index.htm>

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 141113
Date: 07/18/1990
Pages: 17
Title: [LDEQ REQUESTS EPA ASSISTANCE DUE TO POTENTIAL HEALTH AND ENVIRONMENTAL RISKS PRESENT AT THIS SITE]
Doc Type: CORRESPONDENCE

| Name | Organization |
|---------------------------------------|-----------------------------------------------|
| Author: ETHRIDGE , HAROLD F | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| Addressee: HAMMACK , PATRICK L | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908520
Date: 02/28/1991
Pages: 276
Title: SITE ASSESSMENT REPORT
Doc Type: REPORT / STUDY

| Name | Organization |
|----------------------------------|--------------------------------------|
| Author: NAQUIN , TROY M | ECOLOGY & ENVIRONMENT INCORPORATED |
| Addressee: SULLIVAN , BOB | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| PETERSEN , CHRIS J | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| FRUITWALA , KISHOR | ECOLOGY & ENVIRONMENT INCORPORATED |

Docid: 914198
Date: 09/01/1993
Pages: 8
Title: PRESUMPTIVE REMEDIES: POLICY AND PROCEDURES
Doc Type: ELECTRONIC RECORD
FACTSHEET

| Name | Organization |
|--------------------------|--------------------------------------|
| Author: NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| Addressee: NONE , | NONE |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908518
Date: 05/18/1994
Pages: 47
Title: SITE ASSESSMENT REPORT
Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-----------------------|--------------------------------------|
| Author: | NAQUIN , TROY M | ECOLOGY & ENVIRONMENT INCORPORATED |
| Addressee: | PETERSEN , CHRIS J | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | QUINA , CHRISTOPHER L | ECOLOGY & ENVIRONMENT INCORPORATED |
| | SULLIVAN , ROBERT | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 104288
Date: 03/12/1998
Pages: 3
Title: MARCH 2-3 1998, SITE RECONNAISSANCE INSPECTION FOR THE RUSTON FOUNDRY SUPERFUND SITE
Doc Type: MEMORANDUM

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------|-----------------------------------------------|
| Author: | HORN , KEITH | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| Addressee: | NONE , | RUSTON FOUNDRY AND MACHINE SHOPS |

Docid: 131503
Date: 08/20/1998
Pages: 1
Title: [DESIGN SUSPENSION OF CAPITAL CONSTRUCTION ON CHATLIN CANAL ADJACENT TO RUSTON FOUNDRY]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|------------------------|--------------------------------------|
| Author: | WILLIAMSON , DARRELL | ALEXANDRIA CITY OF |
| Addressee: | CANELLAS , BARTOLOME J | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 91731
Date: 09/01/1998
Pages: 826
Title: EXPANDED SITE INSPECTION REPORT FOR RUSTON FOUNDRY SUPERFUND SITE
Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | ECOLOGY & ENVIRONMENT INCORPORATED |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908517
Date: 01/01/1999
Pages: 37
Title: AERIAL PHOTOGRAPHIC ANALYSIS
Doc Type: PHOTOGRAPH / SLIDE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|----------------|-------------------------------------------------------|
| Author: | KARTMAN , A.S. | LOCKHEED ENVIRONMENTAL SYSTEMS & TECHNOLOGIES COMPANY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 104308
Date: 01/19/1999
Pages: 3
Title: RUSTON FOUNDRY SITE UPDATE - EPA, LDEQ BEGIN PLANS FOR SITE CLEANUP
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

Docid: 104088
Date: 02/22/1999
Pages: 3
Title: FACT SHEET FOR RUSTON FOUNDRY SUPERFUND SITE
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

Docid: 106265
Date: 04/12/1999
Pages: 3
Title: EPA PLANS SOIL SAMPLING FOR RUSTON FOUNDRY SUPERFUND SITE
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 116135
Date: 03/17/1999
Pages: 3
Title: [TRANSMITTAL AND APPLICATION FOR TECHNICAL ASSISTANCE GRANT ELIGIBILITY CRITERIA FOR THE RUSTON FOUNDRY SUPERFUND SITE]

Doc Type: CORRESPONDENCE
OUTLINE

| | Name | Organization |
|----------------|-----------------|--------------------------------------|
| Author: | NEGRI , BEVERLY | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | Name | Organization |
|-------------------|--------------|---------------------|
| Addressee: | MEDICA , SAM | NONE |

Docid: 116161
Date: 04/02/1999
Pages: 2
Title: [EPA'S RESPONSE TO THE LOWER THIRD NEIGHBORHOOD CONCERNED CITIZENS INCORPORATED LETTER OF INTENT TO APPLY FOR THE TECHNICAL ASSISTANCE GRANT FOR THE RUSTON FOUNDRY SUPERFUND SITE]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|----------------|-----------------|--------------------------------------|
| Author: | NEGRI , BEVERLY | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | Name | Organization |
|-------------------|-----------------|---------------------|
| Addressee: | HARRIS , MARGIE | NONE |

Docid: 907826
Date: 08/01/1999
Pages: 24
Title: COMMUNITY INVOLVEMENT PLAN
Doc Type: COMMUNITY RELATIONS PLAN

| | Name | Organization |
|----------------|-------------|---------------------|
| Author: | NONE , | CH2M HILL |

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 131519
Date: 08/11/1999
Pages: 1
Title: [LETTER FROM DEPARTMENT OF INTERIOR INDICATING NO NEED OF INVOLVEMENT FOR RUSTON FOUNDRY]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|----------------|-----------------|------------------------|
| Author: | SEKAVEC , GLENN | DEPARTMENT OF INTERIOR |

| | Name | Organization |
|-------------------|-------------------|--------------------------------------|
| Addressee: | HIGGINS , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 145109
Date: 08/11/1999
Pages: 10
Title: THE CERCLA OFF-SITE DISPOSAL REPORT FOR RUSTON FOUNDRY SITE FOR RECEIVING RCRA FACILITY:
TEXAS ECOLOGISTS, INC.
Doc Type: REPORT / STUDY

| | Name | Organization |
|-------------------|-------------|-----------------------------------------|
| Author: | NONE , | CET ENVIRONMENTAL SERVICES INCORPORATED |
| | Name | Organization |
| Addressee: | NONE , | NONE |

Related Document(s):

Docid: 902662
Date: 08/11/1999
Pages: 9
Title: THE CERCLA OFF-SITE DISPOSAL REPORT FOR RUSTON FOUNDRY SITE FOR RECEIVING RCRA FACILITY:
TEXAS ECOLOGISTS, INC.
Doc Type: REPORT / STUDY

| | Name | Organization |
|-------------------|-------------|---------------------|
| Author: | NONE , | NONE |
| | Name | Organization |
| Addressee: | NONE , | NONE |

Docid: 902663
Date: 08/11/1999
Pages: 12
Title: THE CERCLA OFF-SITE DISPOSAL REPORT FOR RUSTON FOUNDRY SITE FOR RECEIVING RCRA FACILITY:
CLEAN HARBORS ENVIRONMENTAL
Doc Type: REPORT / STUDY

| | Name | Organization |
|-------------------|-------------|---------------------|
| Author: | NONE , | NONE |
| | Name | Organization |
| Addressee: | NONE , | NONE |

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REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 902664

Date: 08/11/1999

Pages: 9

Title: THE CERCLA OFF-SITE DISPOSAL REPORT FOR RUSTON FOUNDRY SITE FOR RECEIVING RCRA FACILITY:
CHEMICAL WASTE MANAGEMENT

Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|---------------------|
| Author: | NONE , | NONE |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|---------------------|
| Addressee: | NONE , | NONE |

Docid: 914199

Date: 09/01/1999

Pages: 48

Title: PRESUMPTIVE REMEDY FOR METALS-IN-SOIL SITES

Doc Type: ELECTRONIC RECORD
FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|---------------------|
| Addressee: | NONE , | NONE |

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REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 131087
Date: 09/20/1999
Pages: 615
Title: REMOVAL ASSESSMENT REPORT DATED SEPTEMBER 20, 1999, FOR THE RUSTON FOUNDRY SUPERFUND SITE
Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------------|--------------------------------------|
| Author: | QUINA, CHRISTOPHER L | ECOLOGY & ENVIRONMENT INCORPORATED |
| | NANCE, GENE | ECOLOGY & ENVIRONMENT INCORPORATED |
| | THOMPSON JR., HENRY | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | Name | Organization |
|-------------------|------------------|--------------------------------------|
| Addressee: | SULLIVAN, ROBERT | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Related Document(s):

Docid: 907811
Date: 05/27/1999
Pages: 175

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED ON SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 29, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|---------------|------------------------------------|
| Author: | BOGOLIN, TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Addressee: | NANCE, GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 907812
Date: 05/27/1999
Pages: 178

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED ON SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 22, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|---------------|------------------------------------|
| Author: | BOGOLIN, TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Addressee: | NANCE, GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 907813

Date: 05/27/1999

Pages: 86

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED ON SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 22, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|--------------|--------------------------------------|
| Addressee: | NANCE , GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 907814

Date: 05/26/1999

Pages: 174

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED ON SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 28, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|--------------|--------------------------------------|
| Addressee: | NANCE , GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

| | |
|------------------|-------------------------------|
| Site Name | RUSTON FOUNDRY (LAD985185107) |
| CERCLIS | LAD985185107 |
| OUID | N/A |
| SSID | RUSTON FOUNDRY (1F) |
| Action | REMEDIAL |

Related Document(s):

Docid: 907815
Date: 05/27/1999
Pages: 190

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 22, 1999]

Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------|--------------------------------------|
| Addressee: | NANCE , GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 907816
Date: 06/02/1999
Pages: 33

Title: [LABORATORY REPORT FOR THE REDIGESTION AND REANALYSIS OF SAMPLE RES04-1 FOR LEAD]

Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|------------------|------------------------------------|
| Addressee: | ANDERSON , DAVID | ECOLOGY & ENVIRONMENT INCORPORATED |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 907817
Date: 05/27/1999
Pages: 226

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED ON SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON MAY 29, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|--------------|--------------------------------------|
| Addressee: | NANCE , GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 907818
Date: 05/27/1999
Pages: 149

Title: [LABORATORY REPORT OF THE ANALYSIS CONDUCTED SAMPLES RECEIVED AT THE ANALYTICAL SERVICES CENTER ON APRIL 30, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|--------------|--------------------------------------|
| Addressee: | NANCE , GENE | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 907819

Date: 08/09/1999

Pages: 259

Title: [REPORT ON LABORATORY RESULTS FROM SAMPLES RECEIVED ON JULY 20, 1999]

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|----------------|------------------------------------|
| Author: | BOGOLIN , TONY | ECOLOGY & ENVIRONMENT INCORPORATED |

| | Name | Organization |
|-------------------|-------------------|------------------------------------|
| Addressee: | MCREYNOLDS , DOUG | ECOLOGY & ENVIRONMENT INCORPORATED |

Docid: 901553

Date: 09/24/1999

Pages: 41

Title: RESPONSE ACTION CONTRACT - REMEDIAL INVESTIGATION HEALTH AND SAFETY PLAN, VERSION 1 - RUSTON FOUNDRY SITE

Doc Type: REPORT / STUDY

| | Name | Organization |
|----------------|-------------|---------------------|
| Author: | NONE , | CH2M HILL |

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 131573

Date: 10/11/1999

Pages: 2

Title: [CORRESPONDENCE REGARDING HEALTH AND SAFETY PLAN FOR RUSTON FOUNDRY]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|----------------|--------------------|-----------------------------------------------|
| Author: | CASANOVA , KEITH L | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

| | Name | Organization |
|-------------------|-------------------|--------------------------------------|
| Addressee: | HIGGINS , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 901554
Date: 11/01/1999
Pages: 23
Title: RESPONSE ACTION CONTRACT - INTERIM SITE MANAGEMENT PLAN - REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Doc Type: WORK PLAN / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 901555
Date: 11/01/1999
Pages: 62
Title: RESPONSE ACTION CONTRACT - QUALITY ASSURANCE PROJECT PLAN - PRE-REMEDIAL INVESTIGATION FIELD EVENT
Doc Type: WORK PLAN / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 901558
Date: 11/01/1999
Pages: 88
Title: RESPONSE ACTION CONTRACT - FIELD SAMPLING PLAN - PRE-REMEDIAL INVESTIGATION FIELD EVENT
Doc Type: WORK PLAN / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 131968
Date: 12/01/1999
Pages: 4
Title: RUSTON FOUNDRY SITE UPDATE: ENVIRONMENTAL PROTECTION AGENCY PLANS INVESTIGATION FOR RUSTON FOUNDRY SITE
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

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REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908502
Date: 12/29/1999
Pages: 13
Title: [CORRESPONDENCE REGARDING CONTRACT LABORATORY PROGRAM DATA REVIEW]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|---------------------|--------------------------------------|
| Author: | CHIANG , TOM C | LOCKHEED MARTIN SERVICES GROUP |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | HUMPHREY , MARVELYN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | RITTER , MELVIN | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908507
Date: 01/05/2000
Pages: 13
Title: [CORRESPONDENCE REGARDING CONTRACT LABORATORY PROGRAM DATA REVIEW]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|---------------------|------------------------------------------------|
| Author: | CHIANG , TOM C | LOCKHEED MARTIN SERVICES GROUP |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | HUMPHREY , MARVELYN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | RITTER , MELVIN | U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VI |

Docid: 908505
Date: 01/19/2000
Pages: 12
Title: [CORRESPONDENCE REGARDING CONTRACT LABORATORY PROGRAM DATA REVIEW]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|---------------------|------------------------------------------------|
| Author: | CHIANG , TOM C | LOCKHEED MARTIN SERVICES GROUP |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | HUMPHREY , MARVELYN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | RITTER , MELVIN | U.S. ENVIRONMENTAL PROTECTION AGENCY REGION VI |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 901987
Date: 03/13/2000
Pages: 2
Title: [SITE UPDATE - EPA SCHEDULES OPEN HOUSE FOR RUSTON FOUNDRY SITE]
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

Related Document(s):

Docid: 902367
Date: 03/28/2000
Pages: 1

Title: [OPEN HOUSE ANNOUNCEMENT AND HOW TO RECEIVE MORE INFORMATION ABOUT RUSTON FOUNDRY SUPERFUND SITE]

Doc Type: NOTICE

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|---------------------|
| Addressee: | NONE , | NONE |

Docid: 901989
Date: 03/23/2000
Pages: 2
Title: [LETTER OF ACCEPTANCE FOR: RESPONSE ACTION CONTRACT-SITE MANAGEMENT PLAN, FIELD SAMPLING PLAN, QUALITY ASSURANCE PROJECT PLAN FOR THE RUSTON FOUNDRY SITE]
Doc Type: CORRESPONDENCE
WORK PLAN / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------------|-----------------------------------------------|
| Author: | BELL , JAMES | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | HIGGINS , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 141898
Date: 04/20/2000
Pages: 2
Title: REQUEST FOR APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS [ARARS]
Doc Type: ARARS

| | Name | Organization |
|-------------------|--------------------|-----------------------------------------------|
| Author: | STENGER , WREN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | Name | Organization |
| Addressee: | CASANOVA , KEITH L | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

Docid: 141897
Date: 05/05/2000
Pages: 2
Title: PRE-REMEDIAL INVESTIGATION PLAN REVISIONS AND QUALITY ASSURANCE PROJECT PLAN REVISIONS
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|---------------------|-----------------------------------------------|
| Author: | BELL , JAMES | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| | Name | Organization |
| Addressee: | HIGGINS , KATRINA M | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 141900
Date: 05/24/2000
Pages: 2
Title: LOUISIANA RESPONSE TO REQUEST FOR APPROPRIATE REQUIREMENTS
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|--------------------|-------------------------------------------|
| Author: | CASANOVA , KEITH L | LOUISIANA DEPARTMENT OF NATURAL RESOURCES |
| | Name | Organization |
| Addressee: | STENGER , WREN | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908681
Date: 06/01/2000
Pages: 3
Title: INFORMATION BULLETIN- SITE SOIL SAMPLING RESCHEDULED FOR AUGUST 2000
Doc Type: FACTSHEET

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | Name | Organization |
| Addressee: | NONE , | NONE |

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CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908687
Date: 06/01/2000
Pages: 108
Title: TECHNICAL ACTIVITIES WORK PLAN- REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Doc Type: WORK PLAN / AMENDMENT

| | Name | Organization |
|-------------------|------------------|-----------------------------------------------------------------------------------------|
| Author: | NONE , NONE , | CH2M HILL SCIENCE APPLICATIONS INTERNATIONAL CORPORATION GEOMARINE, INCORPORATION |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908686
Date: 06/19/2000
Pages: 83
Title: SCREENING-LEVEL PROBLEM FORMULATION AND SCREENING RISK EVALUATION
Doc Type: HEALTH ASSESSMENT

| | Name | Organization |
|-------------------|------------------------------------|------------------------------------------------------------------------------|
| Author: | NONE , | CH2M HILL |
| Addressee: | HIGGINS , KATRINA RODDY , SUSAN | U.S. ENVIRONMENTAL PROTECTION AGENCY U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 141111
Date: 06/30/2000
Pages: 10
Title: RUSTON FOUNDRY REMOVAL ADMINISTRATIVE RECORD INDEX
Doc Type: INDEX

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| Addressee: | NONE , | NONE |

Docid: 902047
Date: 07/01/2000
Pages: 24
Title: RESPONSE ACTION PLAN - SITE MANAGEMENT PLAN REMEDIAL INVESTIGATION FIELD EVENT RUSTON FOUNDRY SITE
Doc Type: WORK PLAN / AMENDMENT

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 901556
Date: 07/05/2000
Pages: 1
Title: [LETTER - SOIL SURVEY REPORT TO DETERMINE IF ANY NORM CONTAMINATION IS PRESENT FOR RUSTON FOUNDRY]
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|----------------|---------------------------------------------|
| Author: | NGUYEN , RICKY | LOUISIANA DEPARTMENT OF ENVIRONMENT QUALITY |
| | Name | Organization |
| Addressee: | NONE , | NONE |

Docid: 901628
Date: 07/13/2000
Pages: 1
Title: [RESPONSE EMAIL MESSAGE FROM ALEXANDRIA GAS COMPANY REGARDING ON THE METER USED AT THE RUSTON FOUNDRY SITE]
Doc Type: CORRESPONDENCE
E-MAIL MESSAGE

| | Name | Organization |
|-------------------|--------------------|--------------------------------------|
| Author: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | Name | Organization |
| Addressee: | JOHNSON , THOMAS L | CH2M HILL |

Docid: 901559
Date: 08/01/2000
Pages: 58
Title: VERSION 2.0 - REMEDIAL INVESTIGATION/FEASIBILITY STUDY - HEALTH AND SAFETY PLAN
Doc Type: WORK PLAN / AMENDMENT

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | Name | Organization |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 902169
Date: 08/11/2000
Pages: 2
Title: [CORRESPONDENCE - SCREENING -LEVEL PROBLEM FORMULATION AND SCREENING RISK EVALUATION RUSTON FOUNDRY]
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|-------------------|-----------------------------------------------|
| Author: | BELL , JAMES | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| | Name | Organization |
| Addressee: | HIGGINS , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 902170
Date: 08/30/2000
Pages: 2
Title: [CORRESPONDENCE - SITE MANAGEMENT PLAN AND TECHNICAL ACTIVITIES WORK PLAN, REMEDIAL INVESTIGATION RUSTON FOUNDRY]
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|-------------------|-----------------------------------------------|
| Author: | BELL, JAMES | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| Addressee: | COLTRAIN, KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908679
Date: 09/15/2000
Pages: 41
Title: FINAL DRAFT- FIELD SAMPLING PLAN FOR FIELD VERIFICATION OF ECOLOGICAL SAMPLING DESIGN
Doc Type: WORK PLAN / AMENDMENT

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE, | CH2M HILL |
| Addressee: | NONE, | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 907092
Date: 10/01/2000
Pages: 112
Title: QUALITY ASSURANCE PROJECT PLAN FOR RUSTON FOUNDRY SITE
Doc Type: ELECTRONIC RECORD
WORK PLAN / AMENDMENT

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE, | CH2M HILL |
| Addressee: | NONE, | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908680
Date: 10/24/2000
Pages: 2
Title: RUSTON FOUNDRY SUPERFUND SITE OPEN HOUSE QUESTION AND ANSWER SESSION
Doc Type: NOTICE

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE, | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| Addressee: | NONE, | PUBLIC |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908061
Date: 10/26/2000
Pages: 52
Title: PUBLIC HEALTH ASSESSMENT
Doc Type: HEALTH ASSESSMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------------|
| Author: | NONE , | LOUISIANA DEPARTMENT OF HEALTH & HOSPITALS |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

Docid: 907573
Date: 11/01/2000
Pages: 106
Title: FINAL FIELD SAMPLING PLAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY FOR RUSTON FOUNDRY SITE
Doc Type: ELECTRONIC RECORD
REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908694
Date: 12/06/2000
Pages: 54
Title: SUMMARY OF ECOLOGICAL SAMPLING OF TERRESTRIAL HABITATS AT THE RUSTON FOUNDRY SITE
Doc Type: HEALTH ASSESSMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Author: | CHARTRAND , ANDREW | ECOLOGY & ENVIRONMENT INCORPORATED |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | RODDY , SUSAN | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 903411
Date: 12/18/2000
Pages: 40
Title: CHARACTERIZATION OF AQUATIC HABITATS UPSTREAM, ADJACENT TO, AND DOWNSTREAM OF THE RUSTON FOUNDRY SITE
Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | RODDY , SUSAN | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908690
Date: 02/13/2001
Pages: 1
Title: [CORRESPONDENCE REGARDING DATE, TIME, AND LOCATION OF SCHEDULED MEETINGS FOR THE RUSTON FOUNDRY SUPERFUND SITE]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|---------------------|--------------------------------------|
| Author: | WILLIAMSON, DARRELL | ALEXANDRIA CITY OF |
| Addressee: | COLTRAIN, KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 908692
Date: 02/15/2001
Pages: 4
Title: [TRANSMITTAL OF THREE NEWSPAPER ARTICLES WHICH APPEARED IN THE ALEXANDRIA TOWN TALK]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|---------------------|--------------------------------------|
| Author: | MOORE, PATRICK C | PATRICK C. MOORE, ASLA |
| Addressee: | GREENFIELD, BARBARA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | COLTRAIN, KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 902691
Date: 03/22/2001
Pages: 15
Title: HEALTH CONSULTATION
Doc Type: REPORT / STUDY

| | Name | Organization |
|-------------------|-------------------|-----------------------------------------------------|
| Author: | CARRILLO, GENNY | OFFICE OF PUBLIC HEALTH |
| | PETTIGREW, GEORGE | AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY |
| | GALLO, KIMBERLY M | OFFICE OF PUBLIC HEALTH |
| | METCALF, MARGARET | OFFICE OF PUBLIC HEALTH |
| | MCRAE, TAMMIE | AGENCY FOR TOXIC SUBSTANCE AND DISEASE REGISTRY |
| Addressee: | NONE, | NONE |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908684
Date: 03/28/2001
Pages: 2
Title: [INVITATION TO AN INFORMATIONAL MEETING TO BE HELD ON APRIL 9, 2001]
Doc Type: NOTICE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | PUBLIC |

Docid: 908688
Date: 08/01/2001
Pages: 1
Title: [TRANSMITTAL OF THE RAGS-D TABLES- TABLES NOT ATTACHED]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Author: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | CUMMINGS , LINDA | NONE |

Docid: 908683
Date: 10/01/2001
Pages: 4
Title: INFORMATION BULLETIN-EPA COMPLETES SITE REMEDIAL INVESTIGATION
Doc Type: FACTSHEET

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | PUBLIC |

Docid: 908167
Date: 10/01/2001
Pages: 301
Title: FINAL ECOLOGICAL RISK ASSESSMENT
Doc Type: HEALTH ASSESSMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908682
Date: 10/09/2001
Pages: 1
Title: [INVITATION TO INFORMATIONAL MEETING]
Doc Type: NOTICE

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | Name | Organization |
| Addressee: | NONE , | PUBLIC |

Docid: 908847
Date: 01/22/2002
Pages: 1
Title: [REGARDING DRAFT FEASIBILITY STUDY DATED DECEMBER 2001]
Doc Type: CORRESPONDENCE

| | Name | Organization |
|-------------------|--------------------|--------------------------------------|
| Author: | LANE , NORA | STATE OF LOUISIANA |
| | Name | Organization |
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908166
Date: 02/01/2002
Pages: 1096
Title: FINAL REMEDIAL INVESTIGATION REPORT [UNREVISED COVER PAGE]
Doc Type: REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Related Document(s):

Docid: 908762
Date: 07/17/2001
Pages: 2

Title: [E-MAIL REGARDING CONSISTENCY WITH RECAP NUMBERS]
Doc Type: E-MAIL MESSAGE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|-----------------------------------------------|
| Author: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | FAUL , TRAVIS | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | FAUL , TRAVIS | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

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| | |
|------------------|-------------------------------|
| Site Name | RUSTON FOUNDRY (LAD985185107) |
| CERCLIS | LAD985185107 |
| OUID | N/A |
| SSID | RUSTON FOUNDRY (1F) |
| Action | REMEDIAL |

Related Document(s):

Docid: 908766
Date: 08/23/2001
Pages: 3

Title: [REGARDING RUSTON GROUND WATER CLASSIFICATION]
Doc Type: E-MAIL MESSAGE

| | <u>Name</u> | <u>Organization</u> |
|----------------|--------------------|--------------------------------------|
| Author: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | | |
|--|---------------|-----------------------------------------------|
| | FAUL , TRAVIS | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
|--|---------------|-----------------------------------------------|

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | | |
|--|----------------|-----------|
| | CINCOTTA , TOM | CH2M HILL |
|--|----------------|-----------|

| | | |
|--|---------------|-----------------------------------------------|
| | FAUL , TRAVIS | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
|--|---------------|-----------------------------------------------|

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Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908170
Date: 02/28/2002
Pages: 166
Title: FINAL FEASIBILITY STUDY
Doc Type: ELECTRONIC RECORD
REPORT / STUDY

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Related Document(s):

Docid: 914066
Date: 03/11/2002
Pages: 1

Title: [COMMENTS ON THE FINAL FEASIBILITY STUDY DATED FEBRUARY 2002]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------------------|
| Author: | LANE , NORA | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

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CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 908168
Date: 03/01/2002
Pages: 773
Title: FINAL HUMAN HEALTH RISK ASSESSMENT [UNREVISED COVER PAGE]
Doc Type: HEALTH ASSESSMENT

| | Name | Organization |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | CH2M HILL |
| | Name | Organization |
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Related Document(s):

Docid: 913084
Date: 01/28/2002
Pages: 4

Title: [RESPONSE TO OUTSIDE REVIEWER COMMENTS CONCERNING DRAFT HUMAN HEALTH RISK ASSESSMENT]

Doc Type: CORRESPONDENCE

| | Name | Organization |
|----------------|--------------------|--------------------------------------|
| Author: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | Name | Organization |
|-------------------|------------------|---------------------|
| Addressee: | CUMMINGS , LINDA | NONE |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 910724
Date: 03/30/2002
Pages: 20
Title: SUPERFUND PROGRAM PROPOSED PLAN
Doc Type: PROPOSAL

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | PUBLIC |

Related Document(s):

Docid: 907825
Date: 03/04/2002
Pages: 2

Title: [REGARDING REQUEST FOR INPUT FROM THE STATE ON THE PROPOSED PLAN]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|----------------|----------------|--------------------------------------|
| Author: | STENGER , WREN | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|---------------------|-----------------------------------------------|
| Addressee: | CASSANOVA , KEITH L | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

Docid: 913797
Date: 05/03/2002
Pages: 1

Title: [E-MAIL REGARDING COMMENTS ON THE PROPOSED PLAN]
Doc Type: E-MAIL MESSAGE

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|-----------------------------------------------|
| Author: | LANE , NORA | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 913798
Date: 04/18/2002
Pages: 80
Title: HEARING CONCERNING THE RUSTON FOUNDRY SUPERFUND SITE PROPOSED PLAN
Doc Type: PUBLIC MEETING TRANSCRIPT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|---------------------------------------|
| Author: | COATS , JANNETTA | U. S. ENVIRONMENTAL PROTECTION AGENCY |
| | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | JAMESON , LORRAINE | CH2M HILL |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | NONE |

Related Document(s):

Docid: 913799
Date: 04/26/2002
Pages: 2

Title: [PUBLIC COMMENT REGARDING SUGGESTION THAT THE IRON FOUNDRY BE RELOCATED]
Doc Type: PUBLIC COMMENT

| | <u>Name</u> | <u>Organization</u> |
|----------------|------------------|---------------------|
| Author: | MARVE , JOSEPH W | NONE |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|------------------|---------------------------------------|
| Addressee: | COATS , JANNETTA | U. S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 913800
Date: 04/26/2002
Pages: 2

Title: [PUBLIC COMMENT RECOMMENDING THAT THE SITE BE RELOCATED]
Doc Type: PUBLIC COMMENT

| | <u>Name</u> | <u>Organization</u> |
|----------------|-----------------|---------------------|
| Author: | MARVE , KATHY A | NONE |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|------------------|---------------------------------------|
| Addressee: | COATS , JANNETTA | U. S. ENVIRONMENTAL PROTECTION AGENCY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Docid: 913827
Date: 06/24/2002
Pages: 103
Title: RECORD OF DECISION SUMMARY FOR RUSTON FOUNDRY SUPERFUND SITE
Doc Type: RECORD OF DECISION / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|---------------------------------------|
| Author: | MC GEE , AMY | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | SHEEHAN , CHARLES | U. S. ENVIRONMENTAL PROTECTION AGENCY |
| | BUZZELL , JUNE | U. S. ENVIRONMENTAL PROTECTION AGENCY |
| | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | PEYCKE , MARK A | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | KNUDSON , MYRON O | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | PHILLIPS , PAMELA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | CHIA , SING | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | STENGER , WREN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | NONE , | PUBLIC |

Related Document(s):

Docid: 914065
Date: 06/04/2002
Pages: 2
Title: [CONCURRENCE COPY OF CORRESPONDENCE REGARDING REQUEST FOR INPUT FROM THE STATE ON THE RECORD OF DECISION]
Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|-------------------|------------------|----------------------------------------------|
| Author: | STENGER , WREN | U.S. ENVIRONMENTAL PROTECTION AGENCY |
| | <u>Name</u> | <u>Organization</u> |
| Addressee: | CASANOVA , KEITH | LOUISIANA DEPARTMENT OF ENVIROMENTAL QUALITY |

ADMINISTRATIVE RECORD INDEX

FINAL 06/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OUID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 913828
Date: 06/04/2002
Pages: 1

Title: REGION 6 EXECUTIVE SUMMARY
Doc Type: RECORD OF DECISION / AMENDMENT

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|--------------------------------------|
| Author: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|---------------------|
| Addressee: | NONE , | PUBLIC |

Docid: 913829
Date: 06/01/2002
Pages: 1

Title: COMMUNICATION STRATEGY DOCUMENTS CHECK SHEET
Doc Type: LIST

| | <u>Name</u> | <u>Organization</u> |
|----------------|------------------|---------------------------------------|
| Author: | COATS , JANNETTA | U. S. ENVIRONMENTAL PROTECTION AGENCY |

| | | |
|--|--------------------|--------------------------------------|
| | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |
|--|--------------------|--------------------------------------|

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|---------------------|
| Addressee: | NONE , | NONE |

ADMINISTRATIVE RECORD INDEX

FINAL 6/28/2002

REMEDIAL

Site Name RUSTON FOUNDRY (LAD985185107)
CERCLIS LAD985185107
OID N/A
SSID RUSTON FOUNDRY (1F)
Action REMEDIAL

Related Document(s):

Docid: 913081

Date: 06/17/2002

Pages: 1

Title: DRAFT RECORD OF DECISION DATED JUNE 4, 2002

Doc Type: CORRESPONDENCE

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|-----------------------------------------------|
| Author: | LANE , NORA | LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|--------------------|--------------------------------------|
| Addressee: | COLTRAIN , KATRINA | U.S. ENVIRONMENTAL PROTECTION AGENCY |

Docid: 913830

Date: 06/28/2002

Pages: 35

Title: FINAL ADMINISTRATIVE RECORD INDEX FOR RUSTON FOUNDRY SUPERFUND SITE

Doc Type: INDEX

| | <u>Name</u> | <u>Organization</u> |
|----------------|-------------|----------------------|
| Author: | NONE , | TECHLAW INCORPORATED |

| | <u>Name</u> | <u>Organization</u> |
|-------------------|-------------|--------------------------------------|
| Addressee: | NONE , | U.S. ENVIRONMENTAL PROTECTION AGENCY |

APPENDIX B

To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)

Explanation of Significant Differences Relating to the
Ruston Foundry Superfund Site Signed
on September 28, 2004



Explanation of Significant Differences

Ruston Foundry Superfund Site Alexandria, Louisiana

**United States Environmental
Protection Agency
Region 6
Superfund Division**

September 2004



175329

**CONCURRENCE PAGE FOR THE RUSTON FOUNDRY
SUPERFUND SITE
EXPLANATION OF SIGNIFICANT DIFFERENCES**

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I. Introduction

Site Name: Ruston Foundry Superfund Site (LAD985185107)
Site Location: Alexandria, Rapides Parish, Louisiana
Lead Agency: U. S. Environmental Protection Agency, Region 6 (EPA)
Support Agency: Louisiana Department of Environmental Quality (LDEQ)

This decision document presents the Explanation of Significant Differences (ESD) for the Ruston Foundry Superfund Site (Site), in Alexandria, Rapides Parish, Louisiana. The ESD is issued in accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Section 300.435(c)(2)(i) and 300.825(a)(2). The Director of the Superfund Division has been delegated the authority to sign this ESD.

II. Statement of Purpose

The EPA is issuing this ESD for the Ruston Foundry Superfund Site (Site) to document post-Record of Decision (ROD) changes based on new information received from the city and the community during a meeting held on February 26, 2004, regarding future Site reuse and from Kansas City Southern Railway Company (KCS), the potentially responsible party (PRP), during negotiations regarding slag stabilization. This new information significantly changes a component of the selected remedy and adds a contingency remedy; however, it does not fundamentally alter the overall cleanup approach which is stabilization and offsite disposal unless the contingency remedy is implemented. Based on post-ROD discussions between the city and the community, the proposed future Site reuse has changed from recreational, as described in the 2002 ROD, to industrial. This change in land use required revisions to the risk assessment, which in turn revised the soil/sediment cleanup levels, the estimated waste volume to be addressed, and the estimated remedial costs. This change also requires future operation and maintenance (O&M) activities, Five-year Reviews, and Institutional Controls (ICs). These revisions decrease the volume of estimated soil/sediment waste from 15,000 cubic yards (yd³) to 1,766 yd³ and reduce the estimated cost of remedial action from \$5,007,412 to \$2,751,901. Post-ROD discussions with the PRP have indicated that the use of stabilization may not be the most efficient and cost effective method for addressing the slag waste; therefore, a contingency remedy, excavation and offsite disposal, is added to the overall remedial approach and was selected from the alternatives commented on and presented in the 2002 Proposed Plan. If the contingency remedy is implemented, the revised cost estimate would decrease from \$5,007,412 to \$3,035,002. The cost difference for the contingency is due to the disposal of untreated hazardous waste which is more costly.

III. Site History

The Ruston Foundry Site is an abandoned metal foundry that operated from 1908 until 1985 and is

located in an urban area with mixed development within the city limits of Alexandria, Louisiana. The nearest resident is located approximately 80 feet northwest of the Site and approximately 6,000 residents are located within a one-mile radius of the Site. There is a recreational park located approximately 1/4-mile southeast of the Site, and schools identified within one mile of the Site include Peabody Elementary, Peabody Magnet, Jones Street Junior High, Bolton High, South Alexandria Sixth Grade School, and Alma Redwine Primary School.

The Site is 6.6 acres consisting primarily of dilapidated structures and building foundations overgrown with thick brush. The Site is bordered by a series of abandoned railroad tracks to the west, Chatlin Lake Canal to the northeast and east, and Mill Street Ditch to the south and southeast. A 1.62-acre portion of the Site is located just south of Mill Street Ditch (Figure 1). Residential property is located to the north, south, and east of the Site. Historical and active industrialized areas lie further west and north of the Site.

Foundry operations resulted in metals contaminated waste which was dispersed throughout the property as fill material. As a result of this disposal activity, foundry-derived process wastes (slag, foundry sand piles, metal scrap, and castings) cover most of the Site and have contaminated the soil (Figures 2 and 3).

During the 1990s, LDEQ and EPA conducted a series of Site investigations. On January 19, 1999, the Site was proposed to the National Priorities List (NPL), and on May 10, 1999, EPA formally announced the addition of the Site to the NPL in the Federal Register.

IV. Selected Remedy

After review and response to comments, the Record of Decision was signed on June 24, 2002. The Remedial Action Objectives (RAOs) for the Site were to:

| Media of Interest | Remedial Action Objectives (2002 ROD) |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Soil and Sediment | <p>RAO No. 1 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with surface soils and waste piles containing lead at concentrations that would result in a greater than 5 percent chance that a child's blood lead value would exceed 10 micrograms per deciliter.</p> <p>RAO No. 2 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with surface soils and waste piles containing antimony at concentrations which have a hazard index greater than 1.</p> <p>RAO No. 3 - Prevent leaching and migration of lead from surface soils and waste piles into the ground water at concentrations exceeding 0.015 milligrams per liter.</p> <p>RAO No. 4 - Prevent leaching and migration of antimony from surface soils and waste piles into the ground water at concentrations exceeding 0.006 milligrams per liter.</p> |
| Other Media | <p>RAO No. 5 - Prevent direct human contact with asbestos containing material at concentrations greater than 1 percent by weight.</p> <p>RAO No. 6 - Prevent direct contact with the underground storage tank, its contents, and surrounding contaminated soils.</p> <p>RAO No. 7 - Prevent direct human contact (trespassers, adult recreators, and child recreators) with slag pile material with toxicity characteristic leaching procedure lead concentrations greater than 5 milligrams per liter and handle as hazardous waste in accordance with all applicable federal, state, and local regulations.</p> <p>RAO No. 8 - Prevent migration of contaminants to deeper soils and ground water through the former onsite water supply well and from the existing buildings, slabs, sump, and trash.</p> |

Because there are no Federal or State cleanup standards for soil contamination, the EPA established the RAO cleanup levels (CLs) based on the baseline human health risk assessment. The selected CLs will reduce the excess noncancer risk associated with exposure to contaminated wastes, the excess risk of exceeding 10 micrograms per deciliter blood lead level, and the potential for migration of contaminants into the ground water.

This will be achieved by:

- reducing the concentrations of the soil contaminated with antimony to 150 milligrams per kilogram (mg/kg) and/or less than the Louisiana Synthetic Precipitation Leachate Procedure (LA SPLP);
- reducing the concentrations of the soil contaminated with lead to 500 mg/kg and/or less than the LA SPLP;
- removing Asbestos Containing Material and disposing of waste offsite;
- removing the Underground Storage Tank, its contents and surrounding Polychlorinated Biphenols soils and disposing of waste offsite;
- abandoning the onsite water supply well and disposing of building debris offsite; and,
- stabilization of hazardous waste and disposing of the waste offsite.

The major components of the original remedy.

1. Stabilization - Approximately 1,300 cubic yards (yd³) of hazardous waste will be excavated and stabilized. The material will be stabilized until sampling verifies that it no longer exceeds the Toxicity Characteristic Leaching Procedure (TCLP) for lead. After verification, the waste will be disposed offsite at a Resource Conservation and Recovery Act (RCRA) regulated Subtitle D facility.
2. Asbestos Containing Material (ACM) - Materials will be consolidated onsite, contained, and transported offsite to a disposal facility licensed to accept ACM. Methods to control airborne dispersion of asbestos will be implemented during remediation. The estimated total volume of material is 22 yd³.
3. Underground Storage Tank (UST) - The UST, its contents, and the surrounding petroleum wastes will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or Oil Pollution Act (OPA) authority. The surrounding polychlorinated biphenol (PCB) contaminated soils will be removed and disposed offsite in accordance with all federal, state, and local regulations. Total volume of tank contents is estimated at 5,000 gallons. The volume of associated contaminated soil is included in the soil/sediment estimated volume of 15,000 yd³.
4. Building debris and water supply well - The onsite well will be plugged and abandoned in accordance with all federal, state, and local regulations. Portions of the Site will be cleared, where necessary, and the existing buildings and foundations will be demolished, removed and disposed offsite.
5. Soil/sediment - Approximately 15,000 yd³ of lead and antimony contaminated soils and sediment will be excavated and disposed offsite in a RCRA Subtitle D facility.
6. Air Monitoring - During remedial action, efforts will be made to control dust and run-off to limit the amount of materials that may migrate to a potential receptor. Air monitoring will be conducted during times of remediation to ensure that control measures are working to regulate Site emissions.
7. Short-term monitoring - Monitoring of the surface water and ground water during remedial action may be necessary to ensure that runoff control measures are working.

V. Basis for the Document

Post-ROD discussions between the city and the community resulted in changing the proposed future Site reuse from recreational to industrial. This change in land use required revisions to the baseline

human health risk assessment (BHHRA), which in turn revised the soil/sediment cleanup levels, the estimated waste volume to be addressed, and the estimated remedial costs.

Post-ROD negotiations between EPA and KCS have raised questions concerning the efficiency and cost effectiveness of slag stabilization. The slag ranges from tennis ball to bowling ball in size and is estimated to be 1,300 yd³. In order to stabilize the material, it will need to be crushed in order to increase the surface area and make the lead more readily available to the stabilizing agent. During the implementation of the treatability evaluation, the stabilization process will be evaluated to determine its efficiency and cost effectiveness as compared to the contingency remedy. The contingency remedy is Excavation and Offsite Disposal and was chosen from the alternatives commented on and presented in the Proposed Plan. The final remedial process will be based upon the results of the treatability evaluation.

This new information significantly changes a component of the selected remedy; however, it does not fundamentally alter the overall cleanup approach which is stabilization and offsite disposal unless the contingency remedy is implemented. This change will also require future operation and maintenance (O&M) activities, Five-year Reviews, and Institutional Controls (ICs).

Revised Risk Assessment

Because the future Site reuse changed, the BHHRA was revised to evaluate potential risk associated with Site specific wastes based on an industrial scenario rather than the previously used recreational scenario (Appendix A). The same data and major chemicals of potential concern (COPCs) used in the BHHRA are used in the revised risk assessment. The COPCs are lead, antimony, polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Because soil was the only medium that posed potential risk, the revised risk assessment will only develop risk related to a worker exposed to soil contaminated with the above mentioned COPCs. The revised risk assessment incorporates the exposure points [surface soil (0 - 3 inches), surface soil (hot spots), and surface soil (slag piles)] and the exposure routes (inhalation, dermal, and ingestion) identified in the BHHRA. The exposure point concentration of each chemical was calculated as the 95% upper confidence level on the arithmetic mean or the maximum detected value which ever is lower, and the EPA recommended reasonable maximum exposure (RME) default values for a worker exposure scenario were used. As such, the potentially exposed population is expected to be workers in light commercial/industry type of work; therefore, an indoor worker scenario is assumed. To evaluate risk from exposure to lead in soil, the adult non-residential population is assumed to be women workers of child-bearing age. The methodology and goal applied are for the protection of fetuses carried by women who experience nonresidential exposures such that the developing fetus would have a chance of no more than 5% exceeding the EPA and Centers for Disease Control and Prevention acceptable blood lead level of 10 micrograms per deciliter.

The revised risk assessment determined that carcinogenic risks under an industrial scenario are within the U.S. EPA generally accepted cancer risk range of one in ten thousand to one in a million (1×10^{-4}

to 1×10^{-6}). However, the revised assessment determined that potential non-cancer risk for the industrial scenario exists for the hot spot areas primarily due to the presence of antimony. The evaluation of exposure to lead was found to exceed the recommended level that no more than 5% exceed the blood lead level of 10 micrograms per deciliter.

VI. Description of Significant Differences

The EPA is issuing this ESD to document post-Record of Decision (ROD) changes based on new information received from the city, the community, and the PRP. The table below lists only those components effected by these changes. All other components of the original selected remedy remain unchanged.

| Component | 2002 ROD | ESD | Difference |
|----------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <u>Remedial Approach</u> | Stabilization and Offsite Disposal | Stabilization and Offsite Disposal with Excavation and Offsite Disposal Contingency for the Hazardous Waste | Addition of the Excavation and Offsite Disposal Contingency for the Hazardous Waste |
| <u>Soil Cleanup Levels</u> | 500 mg/kg lead 150 mg/kg antimony | 1400 mg/kg lead 820 mg/kg antimony | Recreational Scenario versus Industrial Scenario |
| <u>Soil/sediment Volume</u> | 15,000 yd ³ | 1,766 yd ³ | 13,234 yd ³ decrease |
| <u>O&M and ICs</u> (present value cost estimated for 30 year time period) | No Cost | \$397,299 | \$397,299 increase |
| <u>Five-year Reviews</u> (present value cost estimated for 30 year time period) | No Cost | \$43,497 | \$43,497 increase |
| <u>Remedial Cost</u> Stabilization (1,300 yd ³ hazardous waste) and Offsite Disposal | \$5,007,412 | \$2,751,901 | \$2,255,511 decrease |
| Excavation and Offsite Disposal | | \$3,035,002 | \$1,972,410 decrease |

| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------|--------------------|
| Contingency Remedy 1,300 yd ³ hazardous waste: Cost of Excavation and Offsite Disposal versus Stabilization and Disposal | Stabilization and Disposal \$510,380 | Excavation and Disposal \$700,700 | \$190,320 increase |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------|--------------------|

Cleanup Levels

Lead and Antimony

The cleanup levels (CLs) in the 2002 ROD were established to address potential risks associated with a recreational scenario involving adults and children. The antimony and lead CLs were 150 milligrams per kilogram (mg/kg) and 500 mg/kg, respectively. Under the industrial scenario, risks are based on an adult worker and a pregnant woman worker (Appendix A). The CLs for the industrial scenario are 820 mg/kg for antimony and 1400 mg/kg for lead (Figure 4).

Synthetic Precipitation Leaching Procedure (SPLP) Criteria

During the remedial investigation, 42 samples were analyzed using the synthetic precipitation leaching procedure (SPLP) as described in the Louisiana Risk Evaluation/Corrective Action Program (RECAP, October 20, 2003). The results were compared to the SPLP screening values that are protective of ground water. The results for lead and antimony were found to exceed the screening values and were therefore included in the 2002 ROD and the Public Comment ESD as areas requiring remediation. Upon further review, LDEQ applied the procedure for determining a site-specific cleanup value for soil removal based upon a threat to ground water quality provided in Appendix H of RECAP. By applying this methodology, site-specific SPLP cleanup values for soil needing removal based upon a threat to ground water were calculated. The site-specific SPLP cleanup value protective of ground water for lead was calculated to be 8.7 milligrams per liter (mg/L) and for antimony was calculated to be 3.5 mg/L (Appendix B). The maximum Ruston SPLP sample values for lead and antimony are 1.81 mg/L and .679 mg/L, respectively. Based on this evaluation, there are no Ruston SPLP sample locations that exceed the calculated ground water protectiveness cleanup values for lead or antimony.

Volume

The soil volume estimated in the 2002 ROD was based on the 150 mg/kg antimony and 500 mg/kg lead CLs as well as the exceedances of the synthetic precipitation leachate procedure (SPLP) screening values. The volume of soil exceeding both SPLP and the CLs was estimated to be 15,000 yd³. With a change in CLs and SPLP cleanup values, there is a change in the estimated soil volume (Appendix C). The estimated volume of soil exceeding the 820 mg/kg antimony and 1400 mg/kg lead CLs is 1,766 yd³.

Cost

The estimated remedial cost is based on the volume of waste that needs to be addressed. Because the volume of waste requiring excavation and removal decreased, the cost for this activity also decreased. The estimated cost associated with excavation and disposal of 1,766 yd³ is \$326,372 which is much less

than the \$2,436,600 estimated in the 2002 ROD for excavation and disposal of 15,000 yd³ (Appendix D).

Because waste will be left onsite above levels that allow for unlimited use and unrestricted exposure, future O&M activities, Five-year Reviews, Institutional Controls (ICs), and additional associated costs will become part of the revised remedy. Annual O&M activities will include, but are not limited to, Site inspection and maintenance, IC inspection and enforcement, and Site reports. Reviews of the remedy will be conducted no less than every five years to ensure that the remedy is functioning as designed, and remains protective of human health and the environment. The purpose of the IC is to ensure that the property remains zoned industrial and is only used for that purpose (Appendix E). A conveyance notice will be filed with the property deed describing the Site conditions and the land use restrictions to control exposure to contamination left onsite. The restrictions would prohibit any unauthorized excavation or use of contaminated soil and limit future use of the property to industrial purposes. Enforcement of the IC will be the responsibility of the State and the local governing authorities. Costs (Appendix D) associated with these future activities will be incurred for as long as the waste remains on the site above levels that allow for unlimited use and unrestricted exposure. For cost estimation purposes, a 30 year period was used. The associated present worth costs are \$397,299 for the O&M and ICs and \$43,497 for the Five Year Reviews.

Contingency Remedy

The contingency remedy is Excavation and Offsite disposal which was presented in the 2002 Proposed Plan as Alternative 5. Costs associated with the contingency remedy are related to excavation activities and disposal of 1,300 yd³ of hazardous waste in a Resource Conservation and Recovery Act (RCRA) hazardous waste landfill (Appendix D). This differs from the stabilization process in that the wastes will not be treated prior to transportation and disposal and will not be disposed of in a RCRA solid waste landfill. Should it be determined through the treatability evaluation that excavation and offsite disposal proves to be the more appropriate method of addressing the hazardous waste, then stabilization will no longer be required. Implementation of the contingency remedy will be documented through a second ESD. The contingency remedy cost for excavation is \$13,000 and the cost for transportation and disposal is \$687,700 for a total of \$700,700.

RAOs

The selected CLs will reduce the potential noncancer risks associated with worker exposure to contaminated wastes and the excess risk of a fetus exceeding 10 micrograms per deciliter blood lead level. The revised RAOs are listed in the following table.

| Media of Interest | Remedial Action Objectives (2004 ESD) |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Soil and Sediment | <p>RAO No. 1 - Prevent direct human contact (pregnant adult woman worker) with surface soils and waste piles containing lead at concentrations that would result in a greater than 5 percent chance that a fetus's blood lead value would exceed 10 micrograms per deciliter.</p> <p>RAO No. 2 - Prevent direct human contact (adult workers) with surface soils containing antimony at concentrations which have a hazard index greater than 1.</p> |
| Other Media | <p>RAO No. 3 - Prevent direct human contact with asbestos containing material at concentrations greater than 1 percent by weight.</p> <p>RAO No. 4 - Prevent direct contact with the underground storage tank, its contents, and surrounding contaminated soils.</p> <p>RAO No. 5 - Prevent direct human contact (pregnant adult woman worker and adult workers) with slag pile material with toxicity characteristic leaching procedure lead concentrations greater than 5 milligrams per liter and handle as hazardous waste in accordance with all applicable federal, state, and local regulations.</p> <p>RAO No. 6 - Prevent migration of contaminants to deeper soils and ground water through the former onsite water supply well and from the existing buildings, slabs, sump, and trash.</p> |

VII. Support Agency Comments

The LDEQ has been consulted and provided the opportunity to comment on this ESD in accordance with the NCP §§ 300.435 (c)(2) and 300.435 (c)(2)(i) and CERCLA § 121 (f). The LDEQ supports the changes in the selected remedy to better reflect the future industrial use of the Site (Appendix F).

VIII. Statutory Determinations

The EPA has determined that these significant changes comply with the statutory requirements of CERCLA § 121, 42 U.S.C. § 9621, are protective of human health and the environment, comply with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, are cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. This remedy also satisfies the statutory preference for treatment as a principal element of the remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment). The hazardous wastes will be excavated, stabilized, and disposed offsite. Should the contingency remedy be used to address the hazardous waste, the statutory preference for treatment will not be met.

IX. Public Participation

This ESD will become part of the Administrative Record (NCP 300.825(a)(2)), which has been developed in accordance with Section 113 (k) of CERCLA, 42 U.S.C. § 9613 (k), and which is available for review at the Rapides Parish Public Library, 411 Washington Street, Alexandria, Louisiana, 71301, Monday-Thursday 9 a.m. to 8 p.m. and Friday-Saturday 9 a.m. to 6 p.m.; Louisiana Department of Environmental Quality, Public Records Center, Galvez Building Room 127, 602 N. Fifth Street, Baton Rouge, Louisiana, 70802, Monday - Friday, 8:00 a.m. to 4:30 p.m.; and, United States Environmental Protection Agency, Region 6, 12th Floor Library, 1445 Ross Avenue, Dallas, Texas, 75202, Monday - Friday, 7:30 a.m. to 4:30 p.m. As required by NCP § 300.435(c)(2)(i)(B), a Notice of Availability and a brief description of the ESD was published in the local paper on July 27, 2004. A public meeting was held on August 10, 2004, from 6:30 p.m. until 8:30 p.m. at the Broadway Resource Center located at 712 Broadway. Responses to comments received during the July 28 through August 31, 2004, comment period are presented in Appendix G.

X. Revisions not included in the ESD presented for Public Comment

Synthetic Precipitation Leaching Procedure (SPLP)

Site SPLP sample results were further analyzed using the Louisiana Risk Evaluation/Corrective Action Program (RECAP, October 20, 2003). Upon further review, LDEQ applied the procedure for determining a site-specific cleanup value for soil removal based upon a threat to ground water quality provided in Appendix H of RECAP (see Section VI and Appendix B). The site-specific SPLP cleanup value protective of ground water for lead was calculated to be 8.7 mg/L and for antimony was calculated to be 3.5 mg/L (Appendix B). Based on this evaluation, there are no Ruston SPLP sample locations that exceed ground water protectiveness criteria. This resulted in minor revisions to the total volume of soil that will be remediated, to the overall remediation cost, to the final list of RAOs, and to the remediation figure that were presented in the Public Comment ESD. Although this discussion was not presented in the text of the Public Comment ESD, it was presented to the community during the Public Meeting held on August 10, 2004.

Ground Water Monitoring

The Public Comment ESD indicated that the ground water would continue to be monitored during the O&M period. Because Site soils do not exceed the site-specific SPLP cleanup value protective of ground water and the risk assessment determined that no complete exposure pathway exists, the ground water will not be monitored and the existing wells will be plugged and abandoned according to LDEQ requirements. Although this discussion was not presented in the text of the Public Comment ESD, it was presented to the community during the Public Meeting held on August 10, 2004.

XI. Authorizing Signatures

This ESD documents the significant changes related to the remedy at the Ruston Foundry Site. These changes were selected by EPA with the concurrence of the Louisiana Department of Environmental Quality.

U.S. Environmental Protection Agency

By: _____

Samuel Coleman, P.E.

Director

Superfund Division

Date: _____

XI. Authorizing Signatures

This ESD documents the significant changes related to the remedy at the Ruston Foundry Site. These changes were selected by EPA with the concurrence of the Louisiana Department of Environmental Quality.

U.S. Environmental Protection Agency

By:

Samuel Coleman, P.E.
Director
Superfund Division

Date:

9/28/2004

Figure 1
Site Map for Ruston Foundry

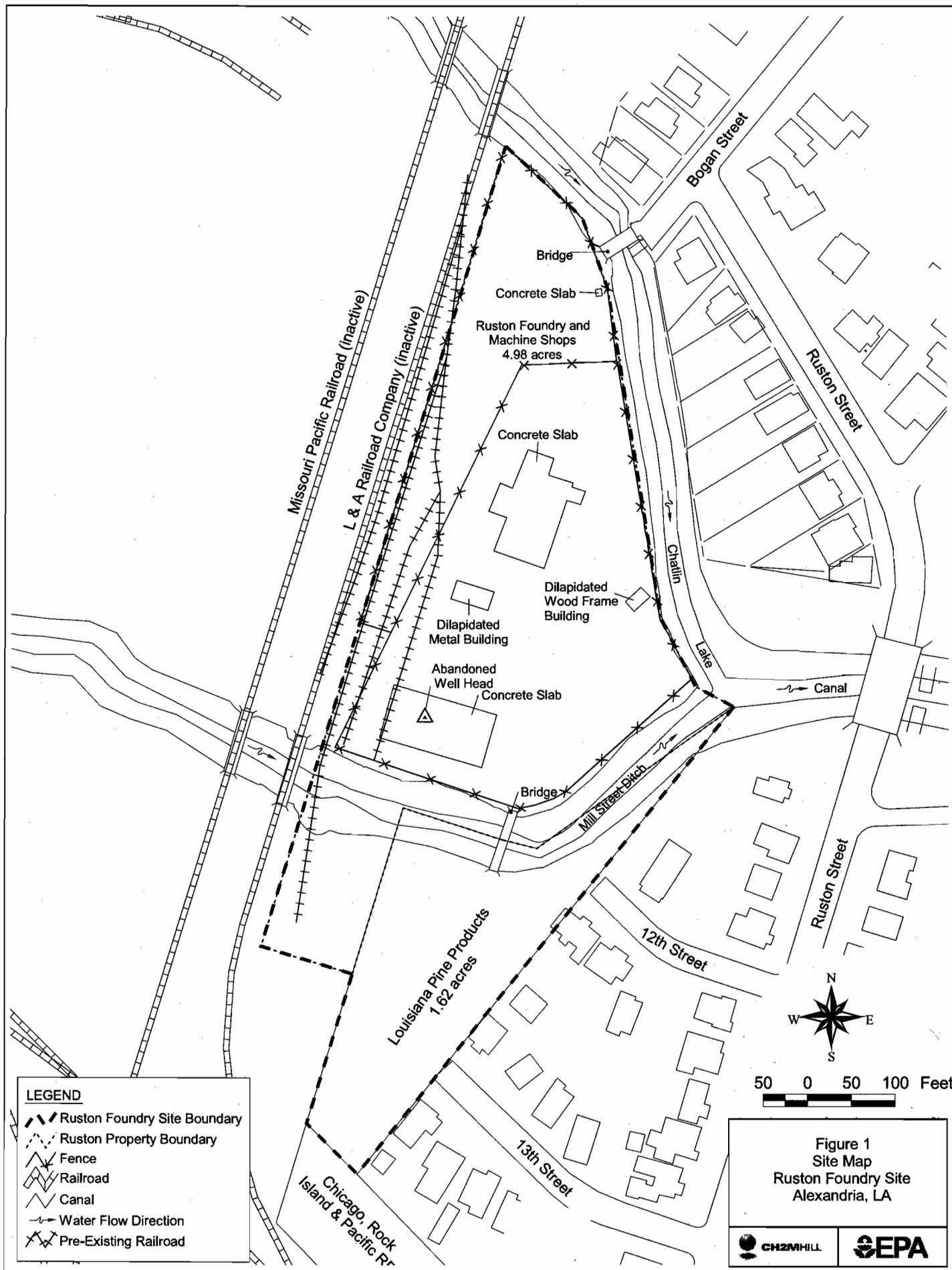


Figure 2
Lead and Antimony Sample Locations

Lead and Antimony Locations



Figure 3
SPLP, UST and Foundry Waste Locations

Sample Locations: SPLP, UST, and Foundry Material

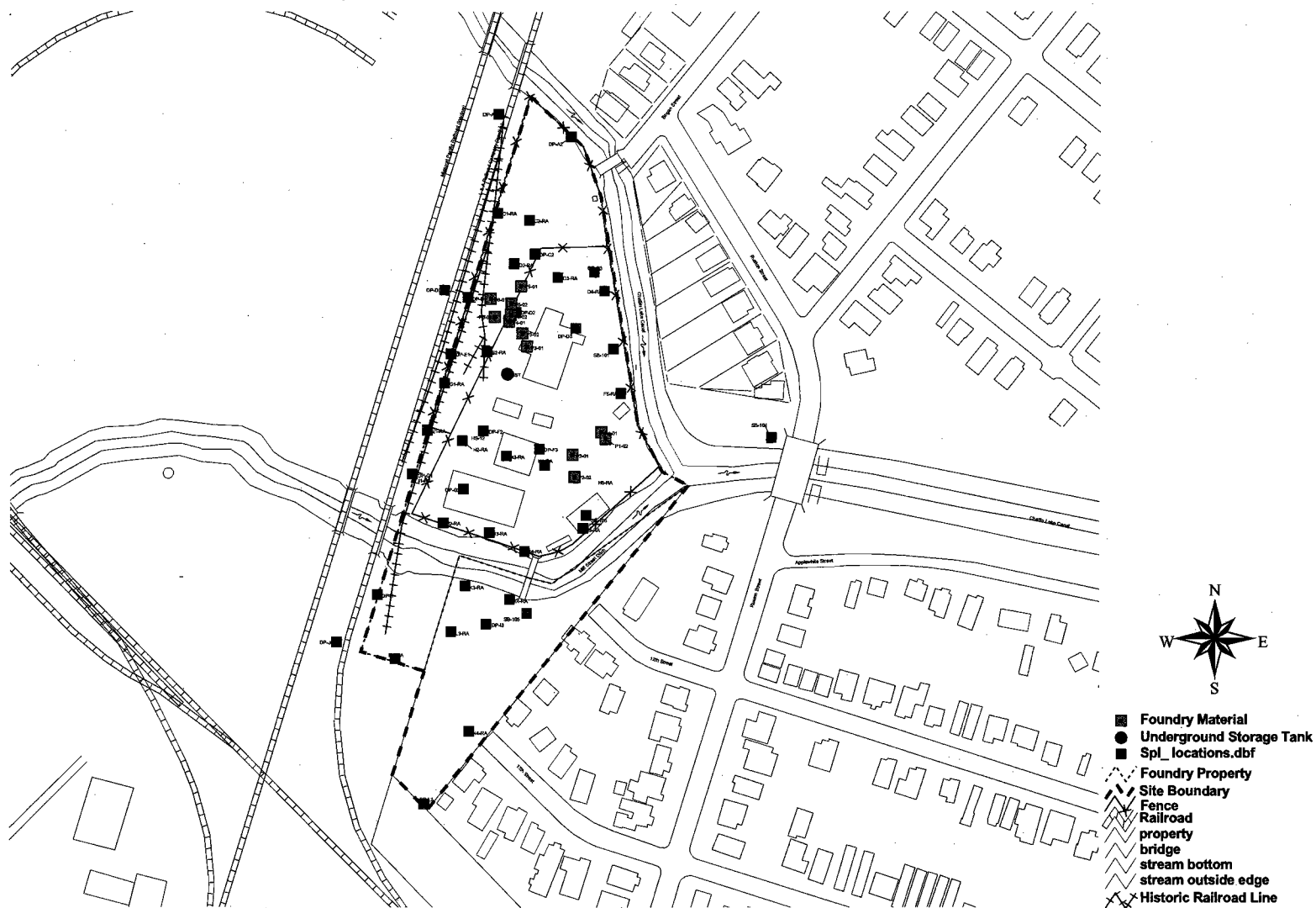


Figure 4
Remediation Area

Remediation Area



Appendix A
Revised Risk Assessment for Ruston Foundry

MEMORANDUM

May 06, 2004

SUBJECT: Human Health Risk Assessment Using a Commercial/Industrial Worker Scenario for Ruston Foundry Superfund Site.

FROM: Ghassan A. Khoury, M.S.P.H., Sc.D.
Toxicologist
Superfund Technical Support Team (6SF-LT)

TO: Katrina Coltrain, RPM
Superfund Branch (6 SF- LP)

This risk assessment is an addendum to the final baseline human health risk assessment that was prepared for the site on March 2002. The future land use for the site was proposed to be a recreational park. However since then, the land use was changed to accommodate developing plans for the site to become light commercial. As such, this addendum is prepared to take into consideration an industrial/commercial adult worker exposure to contaminated onsite soil. The same data that were used for the baseline risk assessment are used here for the commercial/industrial scenario. Refer to tables 3, 4 and 5 for a summary of the risks.

The following soil samples will be used in the risk assessment:

- Grid Soil - Fifty-six soil samples were collected from the zero to 3-inch interval on a 75-foot grid across the site and analyzed for target analyte list (TAL) metals. Eighteen selected soil samples from the zero to one foot interval were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs). For the purpose of this risk assessment, only polynuclear aromatic hydrocarbons (PAHs) and PCBs were included.
- Canal Transect Soil- Twelve soil samples were collected along the banks of Chatlin Lake Canal and Mill Street Ditch (i.e., a total of 24 samples); samples were collected from the zero to 3-inch interval and analyzed for TAL metals.
- Slag Pile Soil - 23 soil samples were collected in six on-site slag piles; samples were collected from multiple depths within and below each pile and analyzed for TAL metals.
- Hot Spot Soil- soil samples were collected from areas of suspected higher concentrations based on historical information and findings made during the Remedial Investigation (RI) activities; samples were collected from the zero to 3-inch interval and analyzed for TAL metals (4 samples) depending on the characteristics of the potential source area.

Chemicals of Potential Concern:

The major chemicals that were identified in the baseline human health risk assessment will be

evaluated here only. The chemicals of potential concern (COPC) were lead, antimony, PAHs and PCBs. This risk assessment will only develop the risk to a worker exposed to soil contaminated with the above mentioned chemicals of concern.

Exposure Assessment:

Potentially Exposed Population:

The future land use was identified to be light commercial/industrial. As such the potential exposed population is expected to be workers in light commercial /industry type of work. An indoor worker scenario is assumed here, where an adult worker is routinely exposed to contaminated media, although intensive exposure is not expected based on day to day work activities. Exposure is generally assumed to be for a typical workday, but continues for the duration of employment, which can be substantial.

The adult non-residential population for evaluating risk from exposure to lead in soil is assumed to be women workers of child-bearing age. The methodology and goal applied are for the protection of fetuses carried by women who experience nonresidential exposures.

Potential Exposure Points:

- Surface Soil: Onsite soil (including soil along canal transects) was identified as an exposure point to workers. Surface soil from zero to 3 inches were sampled for metals and data used in this risk assessment. Concentrations of chemicals were higher at the top surface soil than deeper soil. Samples from zero to one foot intervals were sampled for chemicals other than metals. These data were used to evaluate risk from exposure to PAHs and PCBs.

- Surface Soil (Hot Spots): A few areas of onsite soil were expected to exhibit relatively high concentrations based on site history of activities. These areas were identified as hot spots and evaluated separately from other surface soils.

- Surface Soil (Slag Piles): Six slag piles were identified as exposure points. A separate exposure evaluation was also conducted for this group of samples.

Exposure Pathway Analysis:

A pathway is considered complete if the following exposure conditions are met:

1. A potential source or potential chemical release from a source
2. An exposure point where contact can occur
3. A receptor at the exposure point
4. An exposure route by which contact can occur (e.g. ingestion)

An adult worker is assumed to come in contact with contaminants in surface soil through the

ingestion, dermal or inhalation routes of intake. The contaminants are also assumed to be transported as dust from outside sources to indoor environments.

Quantification of Exposure:

A future potential adult worker is identified as a possible receptor through the ingestion, dermal or inhalation routes of intake of site related contaminants in soil/canal transects, hot spots and slag piles.

The exposure point concentration of each chemical was calculated as the 95% upper confidence level on the arithmetic mean or the maximum detected value which ever is lower. The EPA recommended reasonable maximum exposure (RME) default values for a worker exposure scenario were used. (see table 1.0 for equations and parameter values used in the calculations).

Table 1.0

VALUES USED FOR DAILY INTAKE CALCULATIONS

| | |
|----------------------|-----------------------|
| Scenario Timeframe: | Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil |
| Exposure Point: | On-Site |
| Receptor Population: | Commercial/Industrial |
| Receptor Age: | Worker Adult |

| Exposure Route | Parameter Variable | Units | RME Value | Intake Equation/Model Name |
|----------------|-----------------------------------|---------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------|
| Ingestion | Chemical Conc. in soil (Cs) | mg/kg | --- | Chronic Daily Intake (CDI) (mg/kg-day) = $Cs \times FI \times IR \times EF \times ED \times CF \times 1/BW \times 1/AT$ |
| | Ingestion Rate of Soil (IR) | mg/day | 50 | |
| | Fraction Ingested (FI) | unitless | 1 | |
| | Exposure Frequency (EF) | days/year | 250 | |
| | Exposure Duration (ED) | years | 25 | |
| | Conversion Factor (CF) | kg/mg | 1E-06 | |
| | Body Weight (BW) | kg | 70 | |
| | Averaging Time (Cancer) AT_C | days | 25550 | |
| | Averaging Time (Non-Cancer) AT_N | days | 9125 | |
| Dermal | Chemical Conc. in soil (Cs) | mg/kg | --- | Chronic Daily Intake (CDI)(mg/kg-day) = $Cs \times SA \times AF \times ABS \times EF \times ED \times CF \times 1/BW \times 1/AT$ |
| | Skin Surface Area (SA) | cm ² | 5700 | |
| | Skin Adherence Factor (AF) | mg/cm ² | 0.07 | |
| | Absorption Constant (ABS) | unitless | 0.01 | |
| | Exposure Frequency (EF) | days/year | 250 | |
| | Exposure Duration (ED) | years | 25 | |
| | Conversion Factor (CF) | kg/mg | 1E-06 | |
| | Body Weight (BW) | kg | 70 | |
| | Averaging Time (Cancer) AT_C | days | 25550 | |
| | Averaging Time (Non-Cancer) AT_N | days | 9125 | |
| Inhalation | Chemical Conc. in soil (Cs) | mg/kg | --- | Chronic Daily Intake (CDI)(mg/kg-day) = $Cs \times IR_{inh} \times 1/PEF \times EF \times ED \times 1/BW \times 1/AT$ |
| | Inhalation Rate (IR_inh) | m ³ /day | 20 | |
| | Particulate Emission Factor (PEF) | m ³ /kg | 1.32E+09 | |
| | Exposure Frequency (EF) | days/year | 250 | |
| | Exposure Duration (ED) | years | 25 | |
| | Body Weight (BW) | kg | 70 | |
| | Averaging Time (Cancer) AT_C | days | 25550 | |
| | Averaging Time (Non-Cancer) AT_N | days | 9125 | |

Notes: RME = Reasonable Maximum Exposure

Approach For Lead Exposure

The U.S.EPA recommended approach for assessing nonresidential adult risks utilizes a methodology to relate soil lead intake to blood lead concentrations in women of child-bearing age. The basis for the calculation of the blood lead concentration in women of child-bearing age is the algorithm given by Equation 1:

$$PbB_{adult, central} = PbB_{adult, 0} + \frac{PbS \cdot BKSf \cdot IR_s \cdot AF_s \cdot EF_s}{AT} \quad (\text{Equation 1})$$

where:

- $PbB_{adult, central}$ = Central estimate of blood lead concentrations ($\mu\text{g/dL}$) in adults (i.e., women of child-bearing age) that have site exposures to soil lead at concentration, PbS .
- $PbB_{adult, 0}$ = Typical blood lead concentration ($\mu\text{g/dL}$) in adults (i.e., women of child-bearing age) in the absence of exposures to the site that is being assessed.
- PbS = Soil lead concentration ($\mu\text{g/g}$) (appropriate average concentration for individual).
- $BKSf$ = Biokinetic slope factor relating (quasi-steady state) increase in typical adult blood lead concentration to average daily lead uptake ($\mu\text{g/dL}$ blood lead increase per $\mu\text{g/day}$ lead uptake).
- IR_s = Intake rate of soil, including both outdoor soil and indoor soil-derived dust (g/day).
- AF_s = Absolute gastrointestinal absorption fraction for ingested lead in soil and lead in dust derived from soil (dimensionless).
- EF_s = Exposure frequency for contact with assessed soils and/or dust derived in part from these soils (days of exposure during the averaging period); may be taken as days per year for continuing, long term exposure.
- AT = Averaging time; the total period during which soil contact may occur; 365 days/year for continuing long term exposures.

The basis for the RBRC calculation is the relationship between the soil lead concentration and the blood lead concentration in the developing fetus of adult women that have site exposures. As a health-based goal, EPA has sought to limit the risk to young children of having elevated blood lead concentrations. Current Office of Solid Waste and Emergency Response (OSWER) guidance calls for

the establishment of cleanup goals to limit childhood risk of exceeding 10 µg/dL to 5%. Equation 2 describes the estimated relationship between the blood lead concentration in adult women and the corresponding 95th percentile fetal blood lead concentration ($PbB_{fetal, 0.95}$), assuming that $PbB_{adult, central}$ reflects the geometric mean of a lognormal distribution of blood lead concentrations in women of child-bearing age. If a similar 95th percentile goal is applied to the protection of fetuses carried by women who experience nonresidential exposures, Equation 2 can be rearranged to reflect a risk-based goal for the central estimate of blood lead concentrations in adult women using Equation 3:

$$PbB_{fetal, 0.95} = PbB_{adult, central} \cdot GSD_{i, adult}^{1.645} \cdot R_{fetal/maternal} \quad (\text{Equation 2})$$

$$PbB_{adult, central, goal} = \frac{PbB_{fetal, 0.95, goal}}{GSD_{i, adult}^{1.645} \cdot R_{fetal/maternal}} \quad (\text{Equation 3})$$

where:

$PbB_{adult, central, goal}$ = Goal for central estimate of blood lead concentration (µg/dL) in adults (i.e., women of child-bearing age) that have site exposures. The goal is intended to ensure that $PbB_{fetal, 0.95, goal}$ does not exceed 10 µg/dL.

$PbB_{fetal, 0.95, goal}$ = Goal for the 95th percentile blood lead concentration (µg/dL) among fetuses born to women having exposures to the specified site soil concentration. This is interpreted to mean that there is a 95% likelihood that a fetus, in a woman who experiences such exposures, would have a blood lead concentration no greater than $PbB_{fetal, 0.95, goal}$ (i.e., the likelihood of a blood lead concentration greater than 10 µg/dL would be less than 5%, for the approach described in this report).

$GSD_{i, adult}$ = Estimated value of the individual geometric standard deviation (dimensionless); the GSD among adults (i.e., women of child-bearing age) that have exposures to similar on-site lead concentrations, but that have non-uniform response (intake, biokinetics) to site lead and non-uniform off-site lead exposures. The exponent, 1.645, is the value of the standard normal deviate used to calculate the 95th percentile from a lognormal distribution of blood lead concentration.

$R_{fetal/maternal}$ = Constant of proportionality between fetal blood lead concentration at birth and

maternal blood lead concentration (dimensionless).

The soil lead concentration associated with a given exposure scenario and $PbB_{adult, central, goal}$ can be calculated by rearranging Equation 1 and substituting $PbB_{adult, central, goal}$ for $PbB_{adult, central}$:

$$RBRG = PbS = \frac{(PbB_{adult, central, goal} - PbB_{adult, 0}) \cdot AT}{(BKSF \cdot IR_s \cdot AF_s \cdot EF_p)} \quad (\text{Equation 4})$$

It is this form of the algorithm that can be used to calculate a RBRG where the RBRG represents the soil lead concentration (PbS) that would be expected to result in a specified adult blood lead concentration ($PbB_{adult, central, goal}$) and corresponding 95th percentile fetal blood lead concentration ($PbB_{fetal, 0.95, goal}$).

Equations 1-4 are based on the following assumptions:

1. Blood lead concentrations for exposed adults can be estimated as the sum of an expected starting blood lead concentration in the absence of site exposure ($PbB_{adult, 0}$) and an expected site-related increase.
2. The site-related increase in blood lead concentrations can be estimated using a linear biokinetic slope factor (BKSF) which is multiplied by the estimated lead uptake.
3. Lead uptake can be related to soil lead levels using the estimated soil lead concentration (PbS), the overall rate of daily soil ingestion (IR_s), and the estimated fractional absorption of ingested lead (AF_s). The term "soil" is used throughout this document to refer to that portion of the soil to which adults are most likely to be exposed. In most cases, exposure is assumed to be predominantly to the top layers of the soil which gives rise to transportable soil-derived dust. Exposure to soil-derived dust occurs both in outdoor and indoor environments, the latter occurring where soil-derived dust has been transported indoors. Other types of dust, in addition to soil-derived dust, can contribute to adult lead exposure and may even predominate in the occupational setting; these include dust generated from manufacturing processes (e.g., grinding, milling, packaging of lead-containing material), road dust, pavement dust, and paint dust. This methodology, as represented in Equations 1 and 4, does not specifically account for site exposure to dusts that are not derived from soil. However, the methodology can be modified to include separate variables that represent exposure to lead in various types of dust.

4. As noted above, exposure to lead in soil may occur by ingesting soil-derived dust in the outdoor and/or indoor environments. The default value recommended for IR_s (0.05 g/day) is intended for occupational exposures that occur predominantly indoors. More intensive soil contact would be expected for predominantly outdoor activities such as construction, excavation, yard work, and gardening.
5. A lognormal model can be used to estimate the inter-individual variability in blood lead concentrations (i.e., the distribution of blood lead concentrations in a population of individuals who contact similar environmental lead levels).
6. Expected fetal blood lead concentrations are proportional to maternal blood lead concentrations.

According to the recommendations of the Technical Review Workgroup (U.S. EPA, 2003), the primary basis for using Equation 4 to calculate a risk based remediation goal (RBRG) is that fetuses and neonates are a highly sensitive population with respect to the adverse effects of lead on development and that 10 $\mu\text{g/dL}$ is considered to be a blood lead level of concern from the standpoint of protecting the health of sensitive populations. Therefore, risk to the fetus can be estimated from the probability distribution of fetal blood lead concentrations (i.e., the probability of exceeding 10 $\mu\text{g/dL}$), as has been the approach taken for estimating risks to children. Equation 4 can be used to estimate the soil lead concentration at which the probability of blood lead concentrations exceeding a given value (e.g., 10 $\mu\text{g/dL}$) in fetuses of women exposed to environmental lead is no greater than a specified value (e.g., 0.05) see figure 1.0.

The methodology can be modified to accommodate different assumptions or to estimate RBRGs for different risk categories. For example, a RBRG could be estimated for risks to adults (e.g., hypertension) by substituting an appropriate adult blood lead concentration benchmark. Similarly, other exposure scenarios can be incorporated into the assessment.

Recommended default values for each of the parameters in Equations 1 - 4 are presented in Table 2. These defaults should not be casually replaced with other values unless the alternatives are supported by high quality site-specific data to which appropriate statistical analyses have been applied and that have undergone thorough scientific review.

Table 2. Summary of Default Parameter Values for the Risk Estimation Algorithm (Equations 1 - 4)

| Parameter | Unit | Value | Comment |
|---------------------------|----------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $PbB_{fetal, 0.95_goal}$ | $\mu g/dL$ | 10 | For estimating RBRGs based on risk to the developing fetus. |
| $GSD_{t,adult}$ | -- | 2.07 | This value was taken from National Health and Nutrition Evaluation Survey (NHANES) Phase I&II analysis. It is based on all races/ethnic groups combined in the South Region area of the U.S.A. |
| $R_{fetal/maternal}$ | -- | 0.9 | Based on Goyer (1990) and Graziano et al. (1990). |
| $PbB_{adult,0}$ | $\mu g/dL$ | 1.39 | This value was taken from NHANES Phase I&II analysis. It is based on all races/ethnic groups combined in the South Region area of the U.S.A. |
| BKSF | $\mu g/dL$ per $\mu g/day$ | 0.4 | Based on analysis of Pocock et al. (1983) and Sherlock et al. (1984) data. |
| IR_s | g/day | 0.05 | Predominantly occupational exposures to indoor soil-derived dust rather than outdoor soil; (0.05 g/day = 50 mg/day). |
| EF_s | day/yr | 219 | Based on U.S. EPA (1993) guidance for average time spent at work by both full-time and part-time workers (see Appendix for recommendations on minimum exposure frequency and duration). |
| AF_s | -- | 0.12 | Based on an absorption factor for soluble lead of 0.20 and a relative bioavailability of 0.6 (soil/soluble). |

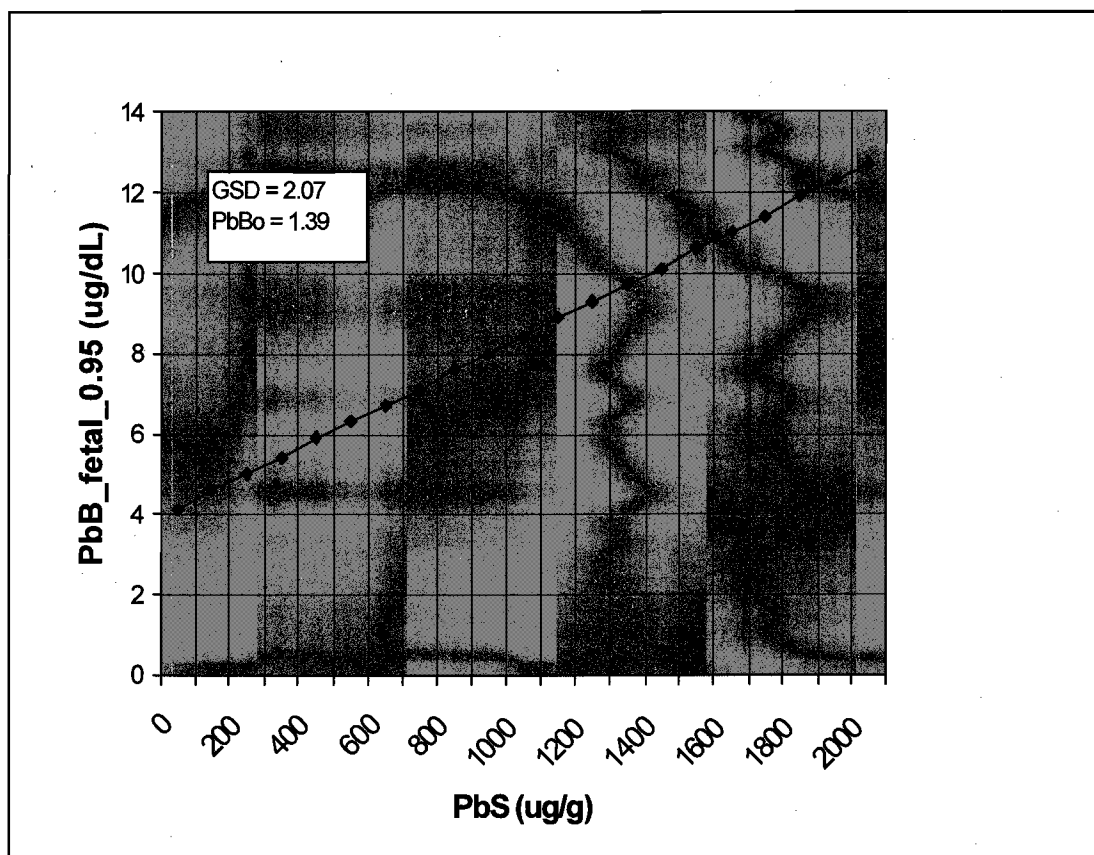


Figure 1.0: Predicted risk estimates output of the adult lead model (95th percentile blood lead levels among fetuses of adult workers in the southern region of the U.S. A.) using a baseline geometric mean blood lead level of 1.39 ug/dL and a geometric standard deviation of 2.07 associated with different soil lead concentrations.

Risk Characterization

Approach for Potential Carcinogenic Effects:

The excess lifetime cancer risk (ELCR) is evaluated quantitatively by multiplying the intake through the ingestion, dermal or inhalation routes in mg/kg-day by the cancer slope factor (SF) of each specific chemical carcinogen:

$$\text{ELCR} = \text{Intake} \times \text{SF}$$

The total cancer risk is then calculated by adding the cancer risk associated with each route of intake (ingestion, dermal and inhalation) for each medium of exposure.

The U.S. EPA evaluates carcinogenic effects at a level of one in a million and considers this level as a point of departure and regulates cancer risk in the generally accepted level between the range of one in ten thousand to one in a million.

Approach for Potential Non-Carcinogenic Effects:

The non-carcinogenic effects are evaluated quantitatively by dividing the intake through the ingestion, dermal or inhalation routes by the reference dose toxicity value for each chemical (RfD). This quotient is referred to as the hazard quotient (HQ) for each chemical. A hazard quotient is calculated for each chemical of concern for each route of intake for each medium.

$$\text{HQ} = \text{Intake} / \text{RfD}$$

The hazard quotients for each chemical is then added for each pathway to get the total hazard quotient of a specific medium. The total hazard quotient is referred to as the hazard index.

The U.S. EPA regulates noncarcinogenic effects at a hazard index value of not exceeding a value of one.

Approach for Lead:

The recommended U.S. EPA approach for evaluating risk to an adult in a non residential setting from exposure to lead in soil is to develop the relationship between soil lead concentration and the blood lead concentration in the developing fetus of adult women that have site exposures to contaminated soil.

The goal is to limit exposure to site contaminated soil by pregnant women in such a way that the developing fetus would have a chance of no more than 5% exceeding the EPA and CDC acceptable blood lead level of 10 µg/dL.

Summary of Risk Estimates:

Future Worker Scenario:

Cancer Risk:

The potential cancer risk to a hypothetical adult worker was calculated for exposure to on-site soil and soil from canal transects as one exposure medium and soil from hot spot areas as another exposure medium. The cancer risk through the oral and dermal routes of intake for exposure to carcinogen PAHs and PCB- 1260 was calculated. The total excess cancer risk from exposure to soil plus canal transects was found to be 3.4×10^{-5} . The total excess cancer risk from exposure to soil (hot spots) was 2.5×10^{-5} (see table 4.0). The levels are within the U.S. EPA generally accepted cancer range of one in ten thousand to one in a million. Carcinogenic risk related to the slag piles was not calculated because neither PAHs nor PCBs were detected and carcinogenic slope factors do not exist for lead and antimony.

Non-Cancer Risk:

The potential non-cancer risk to a hypothetical adult worker was calculated for exposure to soil from the on-site and canal transects as one exposure medium and soil from hot spot areas and soil from slag piles. The hazard index for on-site soil and canal transects was calculated at 0.5, which is below the EPA recommended level for a HI of no more than one. The majority of the hazard was from Antimony, non carcinogenic PAHs contributed the rest (see table 3.0)

The hazard index for the on-site soil in hot spot areas was calculated at 13.7, which is above the EPA recommended level for a HI of not more than one. The majority of the hazard came from antimony, non-carcinogenic PAHs and PCB-1254 contributed the rest of the hazard. The Hazard quotient for the on-site slag piles was calculated at 0.4, which is below the EPA recommended HI of no more than one. The hazard was mainly from exposure to antimony.

Lead Risk:

The risk to an adult worker from exposure to lead in soil (on-site soil and canal transects) was evaluated using the adult model recommended by the U.S. EPA. The population of adult workers were assumed to come from all races/ethnic group between the ages of 17 - 45 years. The concentration of all adult women populations are assumed to come from the southern region of the U.S.A as defined by the National Health and Nutrition Evaluation Survey (NHANES) phases 1 and 2 studies. The baseline geometric mean for this set of population is given by NHANES to be $1.39 \mu\text{g/dL}$ with a geometric standard deviation of 2.07. The model was run with parameter values defined in table 5.0. Based on this calculation, the 95th percentile blood lead among fetuses of adult workers was found at $10.1 \mu\text{g/dL}$ and the probability that fetal blood exceed the target blood lead level of $10 \mu\text{g/dL}$ was calculated at 5.2 %, which is slightly above the U.S. EPA recommended level that no more than 5 % exceed the blood lead level of $10 \mu\text{g/dL}$.

The risk to an adult worker from exposure to lead in soil (hot spots) was evaluated using the adult model recommended by the U.S. EPA. The population of adult workers were assumed to come from all races/ethnic group between the ages of 17 - 45 years. The concentration of all adult women populations are assumed to come from the southern region of the U.S.A as defined by the NHANES phases 1 and 2 studies. The baseline blood lead geometric mean for this set of population is given by NHANES to be 1.39 $\mu\text{g/dL}$ with a geometric standard deviation of 2.07. The model was run with parameter values defined in table 5.0. Based on this calculation, the 95th percentile blood lead among fetuses of adult workers was found at 43.6 $\mu\text{g/dL}$ and the probability that fetal blood exceed the target blood lead level of 10 $\mu\text{g/dL}$ was calculated at 64.8 %, which is above the U.S. EPA recommended level that no more than 5 % exceed the blood lead level of 10 $\mu\text{g/dL}$.

The risk to an adult worker from exposure to lead in soil (slag piles) was evaluated using the adult model recommended by the U.S. EPA. The population of adult workers were assumed to come from all races/ethnic group between the ages of 17 - 45 years. The concentration of all adult women populations are assumed to come from the southern region of the U.S.A as defined by the NHANES phases 1 and 2 studies. The baseline geometric mean for this set of population is given by NHANES to be 1.39 $\mu\text{g/dL}$ with a geometric standard deviation of 2.07. The model was run with parameter values defined in table 5.0. Based on this calculation, the 95th percentile blood lead among fetuses of adult workers was found at 21.3 $\mu\text{g/dL}$ and the probability that fetal blood exceed the target blood lead level of 10 $\mu\text{g/dL}$ was calculated at 27.2%, which is above the U.S. EPA recommended level that no more than 5 % exceed the blood lead level of 10 $\mu\text{g/dL}$.

Table 3.0
Non Cancer Hazard Estimates

| | |
|----------------------|-----------------------|
| Scenario Timeframe: | Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil |
| Exposure Point: | On-Site |
| Receptor Population: | Commercial/Industrial |
| | Worker |
| Receptor Age: | Adult |

| Medium | Chemical | Non-Carcinogenic Hazard Quotient | | | | | | | | |
|--------------------------|---------------------|----------------------------------|-------------------------|-----------------|----------|------------|-----------|------------|---------|-------------------------|
| | | EPC (mg/kg) | Primary Target organ | RfD (mg/kg-day) | | | Ingestion | Inhalation | Dermal | Exposure Route Total |
| | | | | Oral | Dermal * | Inhalation | | | | |
| Soil (Site+Transects) | Antimony | 250 | Circulatory | 4E-04 | 6E-05 | | 0.31 | | 0.16 | |
| | Lead | 1400 | | | | | | | | |
| | 2-Methylnaphthalene | 0.22 | Circulatory | 0.02 | 0.02 | | 5.4E-06 | | 5.6E-07 | |
| | Acenaphthene | 1.6 | Liver | 0.06 | 0.06 | 0.06 | 1.3E-05 | 3.9E-09 | 1.4E-06 | |
| | Anthracene | 3.1 | N.O.E | 0.3 | 0.3 | 0.3 | 5.1E-06 | 1.5E-09 | 5.2E-07 | |
| | Fluoranthene | 46 | Kidney, liver | 0.04 | 0.04 | 0.04 | 5.6E-04 | 1.7E-07 | 5.8E-05 | |
| | Fluorene | 1.3 | Circulatory | 0.04 | 0.04 | 0.04 | 1.6E-05 | 4.8E-09 | 1.6E-06 | |
| | Pyrene | 40 | Kidney | 0.03 | 0.03 | 0.03 | 6.5E-04 | 2.0E-07 | 6.8E-05 | |
| | | | | | | | 0.31 | 3.8E-07 | 0.16 | |
| Soil (Hot Spots) | Antimony | 7300 | Circulatory | 4E-04 | 6E-05 | | 8.9 | | 4.8 | |
| | Lead | 9200 | | | | | | | | |
| | 2-Methylnaphthalene | 0.45 | Circulatory | 0.02 | 0.02 | | 1.1E-05 | | 1.1E-06 | |
| | Acenaphthene | 4.1 | Liver | 0.06 | 0.06 | 0.06 | 3.3E-05 | 1.0E-08 | 3.5E-06 | |
| | Anthracene | 8.3 | N.O.E | 0.3 | 0.3 | 0.3 | 1.3E-05 | 4.1E-09 | 1.4E-06 | |
| | Fluoranthene | 29 | Kidney, liver | 0.04 | 0.04 | 0.04 | 3.6E-04 | 1.1E-07 | 3.7E-05 | |
| | Fluorene | 3.8 | Circulatory | 0.04 | 0.04 | 0.04 | 4.7E-05 | 1.4E-08 | 4.8E-06 | |
| | Pyrene | 26 | Immune | 0.03 | 0.03 | 0.03 | 4.2E-04 | 1.3E-07 | 4.4E-05 | |
| | PCB-1254 | 2.5 | | 2E-05 | 2E-05 | 2E-05 | 6.1E-02 | 1.85E-05 | 6.8E-02 | |
| | | | | | | | 8.9 | 1.9E-05 | 4.8 | |
| Soil (Slag Piles) | Antimony | 190 | Circulatory | 4E-04 | 6E-05 | | 0.23 | | 0.12 | |
| | Lead | 4000 | | | | | | | | |

Notes: RME = Reasonable Maximum Exposure
N.O.E= No Observed Adverse Effects
^a = Dermal RfD were developed from Oral RfDs

Table 4.0
Cancer Risk Estimates

| | |
|----------------------|------------------------------|
| Scenario Timeframe: | Future |
| Medium: | Soil |
| Exposure Medium: | Surface Soil |
| Exposure Point: | On-Site |
| Receptor Population: | Commercial/Industrial Worker |
| Receptor Age: | Adult |

| Medium | Chemical | Carcinogenic Risk | | | | | | | |
|-------------------------|--------------------------|-------------------|----------------------------------------|----------|------------|-----------|------------|---------|-------------------------|
| | | EPC (mg/kg) | Cancer Slope Factor per (mg/kg-day) | | | Ingestion | Inhalation | Dermal | Exposure Route Total |
| | | | Oral | Dermal * | Inhalation | | | | |
| Soil (Site+Transect) | Benzo(a)Anthracene | 18 | 0.73 | 0.73 | 0.31 | 2E-06 | 3E-10 | 2.4E-07 | |
| | Benzo(a) Pyrene | 18 | 7.3 | 7.3 | 3.1 | 2E-05 | 3E-09 | 2.4E-06 | |
| | Benzo(b) Fluoranthene | 20 | 0.73 | 0.73 | 0.31 | 3E-06 | 3E-10 | 2.6E-07 | |
| | Benzo(k) Fluoranthene | 19 | 0.073 | 0.073 | 0.031 | 2E-07 | 3E-11 | 2.5E-08 | |
| | Chrysene | 23 | 0.0073 | 0.0073 | 0.0031 | 3E-08 | 4E-12 | 3.0E-09 | |
| | Dibenzo(a,h)Anthracene | 1 | 7.3 | 7.3 | 3.1 | 1E-06 | 2E-10 | 1.3E-07 | |
| | Indeno(1,2,3-c,d) Pyrene | 9.9 | 0.73 | 0.73 | 0.31 | 1E-06 | 2E-10 | 1.3E-07 | |
| | PCB-1260 | 0.12 | 2.0 | 2.0 | 2.0 | 4E-08 | 1E-11 | 4.7E-08 | |
| | | | | | | 3.0E-05 | 4E-09 | 3.2E-06 | |
| Soil (Hot Spots) | Benzo(a)Anthracene | 14 | 0.73 | 0.73 | 0.31 | 2E-06 | 2E-10 | 1.8E-07 | |
| | Benzo(a) Pyrene | 12 | 7.3 | 7.3 | 3.1 | 2E-05 | 2E-09 | 1.6E-06 | |
| | Benzo(b) Fluoranthene | 11 | 0.73 | 0.73 | 0.31 | 1E-06 | 2E-10 | 1.5E-07 | |
| | Benzo(k) Fluoranthene | 13 | 0.073 | 0.073 | 0.031 | 2E-07 | 2E-11 | 1.7E-08 | |
| | Chrysene | 14 | 0.0073 | 0.0073 | 0.0031 | 2E-08 | 2E-12 | 1.8E-09 | |
| | Dibenzo(a,h)Anthracene | 1.7 | 7.3 | 7.3 | 3.1 | 2E-06 | 3E-10 | 2.2E-07 | |
| | Indeno(1,2,3-c,d) Pyrene | 7.5 | 0.73 | 0.73 | 0.31 | 1E-06 | 1E-10 | 9.9E-08 | |
| | PCB-1260 | 0.8 | 2.0 | 2.0 | 2.0 | 3E-07 | 9E-11 | 3.1E-07 | |
| | | | | | | 2E-05 | 3E-09 | 2.6E-06 | |
| Soil (Slag Piles) | Antimony | 190 | | | | | | | |
| | Lead | 4000 | | | | | | | |

Notes: RME = Reasonable Maximum Exposure
EPC = Exposure Point Concentration

a = Dermal RfD were developed from Oral RfDs

Table 5.0
(Onsite Soil + Canal Transects)

**Calculations of Blood Lead
Concentrations (PbBs)**

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date

05/19/03



| PbB | | | Exposure | | | Values for Non-Residential Exposure | |
|---------------------------------------------|---------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------|-------------|--|-------------------------------------|------------------|
| Equation ¹ | | | Description of Exposure Variable | | | Using Equation 1 | Using Equation 2 |
| Variable | 1 | 2** | | | | | |
| PbS | X | X | Soil lead concentration | ug/g or ppm | | 1400 | 1400 |
| R _{fetal/maternal} | X | X | Fetal/maternal PbB ratio | -- | | 0.9 | 0.9 |
| BKSF | X | X | Biokinetic Slope Factor | ug/dL per | | 0.4 | 0.4 |
| GSD _i | X | X | Geometric standard deviation PbB | -- | | 2.07 | 2.07 |
| PbB ₀ | X | X | Baseline PbB | ug/dL | | 1.39 | 1.39 |
| IR _s | X | | Soil ingestion rate (including soil-derived indoor dust) | g/day | | 0.050 | -- |
| IR _{s+D} | | X | Total ingestion rate of outdoor soil and indoor dust | g/day | | -- | 0.050 |
| W _s | | X | Weighting factor; fraction of IR _{s+D} ingested as outdoor soil | -- | | -- | 1.0 |
| K _{SD} | | X | Mass fraction of soil in dust | -- | | -- | 0.7 |
| AF _{s,D} | X | X | Absorption fraction (same for soil and dust) | -- | | 0.12 | 0.12 |
| EF _{s,D} | X | X | Exposure frequency (same for soil and dust) | days/yr | | 219 | 219 |
| AT _{s,D} | X | X | Averaging time (same for soil and dust) | days/yr | | 365 | 365 |
| PbB _{adult} | PbB of adult worker, geometric mean | | | ug/dL | | 3.4 | 3.4 |
| PbB _{fetal, 0.95} | 95th percentile PbB among fetuses of adult workers | | | ug/dL | | 10.1 | 10.1 |
| PbB _t | Target PbB level of concern (e.g., 10 ug/dL) | | | ug/dL | | 10.0 | 10.0 |
| P(PbB _{fetal} > PbB _t) | Probability that fetal PbB > PbB _t , assuming lognormal distribution | | | % | | 5.2% | 5.2% |

¹ Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_s, K_{SD}).

When IR_s = IR_{s+D} and W_s = 1.0, the equations yield the same PbB_{fetal, 0.95}.

Table 5.0 (continued)
(Onsite Soil + Canal Transects)

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

| | | |
|------------------------------------|----------------------------------------------------------------|--|
| PbB_{adult} = | $(PbS * BKSf * IR_{9/D} * AF_{S,D} * EF_g / AT_{S,D}) + PbB_0$ | |
| PbB_{total, 0.95} = | $PbB_{adult} * (GSD_{1.645} * R)$ | |

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

| | | |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------|--|
| PbB_{adult} = | $PbS * BKSf * ((IR_{9/D} * AF_S * EF_S * W_s) + [K_{90} * (IR_{9/D}) * (1 - W_s) * AF_D * EF_D]) / 365 + PbB_0$ | |
| PbB_{total, 0.95} = | $PbB_{adult} * (GSD_{1.645} * R)$ | |

Table 6.0
(Soil - Hot spots)

**Calculations of Blood Lead
Concentrations (PbBs)**

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date

05/19/03



| Variable | Equation ¹ | | Description of Exposure Variable | Units | Values for Non-Residential Exposure Scenario | |
|---------------------------------------------|---------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------|-------------|----------------------------------------------|------------------|
| | 1 ^a | 2 ^a | | | Using Equation 1 | Using Equation 2 |
| PbS | X | X | Soil lead concentration | ug/g or ppm | 9200 | 9200 |
| R _{fetal/maternal} | X | X | Fetal/maternal PbB ratio | -- | 0.9 | 0.9 |
| BKSF | X | X | Biokinetic Slope Factor | ug/dL per | 0.4 | 0.4 |
| GSD _i | X | X | Geometric standard deviation PbB | -- | 2.07 | 2.07 |
| PbB ₀ | X | X | Baseline PbB | ug/dL | 1.39 | 1.39 |
| IR _s | X | | Soil ingestion rate (including soil-derived indoor dust) | g/day | 0.050 | -- |
| IR _{s+D} | | X | Total ingestion rate of outdoor soil and indoor dust | g/day | -- | 0.050 |
| W _s | | X | Weighting factor; fraction of IR _{s+D} ingested as outdoor soil | -- | -- | 1.0 |
| K _{SD} | | X | Mass fraction of soil in dust | -- | -- | 0.7 |
| AF _{s,D} | X | X | Absorption fraction (same for soil and dust) | -- | 0.12 | 0.12 |
| EF _{s,D} | X | X | Exposure frequency (same for soil and dust) | days/yr | 219 | 219 |
| AT _{s,D} | X | X | Averaging time (same for soil and dust) | days/yr | 365 | 365 |
| PbB _{adult} | PbB of adult worker, geometric mean | | | ug/dL | 14.6 | 14.6 |
| PbB _{fetal, 0.95} | 95th percentile PbB among fetuses of adult workers | | | ug/dL | 43.6 | 43.6 |
| PbB _c | Target PbB level of concern (e.g., 10 ug/dL) | | | ug/dL | 10.0 | 10.0 |
| P(PbB _{fetal} > PbB _c) | Probability that fetal PbB > PbB _c , assuming lognormal distribution | | | % | 64.8% | 64.8% |

¹ Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_s, K_{SD}).

When IR_s = IR_{s+D} and W_s = 1.0, the equations yield the same PbB_{fetal, 0.95}.

Table 6 (continued)
(Soil - Hot spots)

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

| | | |
|------------------------------------|-----------------------------------------------------------------|--|
| PbB_{adult} = | $(PbS * BKS F * IR_{s+D} * AF_{s,D} * EF_s / AT_{s,D}) + PbB_0$ | |
| PbB_{fetal, 0.95} = | $PbB_{adult} * (GSD_{11.645} * R)$ | |

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

| | | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------|--|
| PbB_{adult} = | $PbS * BKS F * [(IR_{s+D}) * AF_s * EF_s * W_s] + [K_{SD} * (IR_{s+D}) * (1 - W_s) * AF_D * EF_D] / 365 + PbB_0$ | |
| PbB_{fetal, 0.95} = | $PbB_{adult} * (GSD_{11.645} * R)$ | |

Table 7.0
(Soil - Slag Piles)

**Calculations of Blood Lead
Concentrations (PbBs)**

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date

05/19/03

| | PbB | | | | Values for Non-Residential Exposure Scenario | |
|---------------------------------------------|---------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------|-------------|----------------------------------------------|------------------|
| Exposure Variable | Equation | | | | | |
| | 1* | 2** | Description of Exposure Variable | Units | Using Equation 1 | Using Equation 2 |
| PbS | X | X | Soil lead concentration | ug/g or ppm | 4000 | 4000 |
| R _{fetal/maternal} | X | X | Fetal/maternal PbB ratio | -- | 0.9 | 0.9 |
| BKSF | X | X | Biokinetic Slope Factor | ug/dL per | 0.4 | 0.4 |
| GSD _i | X | X | Geometric standard deviation PbB | -- | 2.07 | 2.07 |
| PbB ₀ | X | X | Baseline PbB | ug/dL | 1.39 | 1.39 |
| IR _s | X | | Soil ingestion rate (including soil-derived indoor dust) | g/day | 0.050 | -- |
| IR _{s+D} | | X | Total ingestion rate of outdoor soil and indoor dust | g/day | -- | 0.050 |
| W _s | | X | Weighting factor; fraction of IR _{s+D} ingested as outdoor soil | -- | -- | 1.0 |
| K _{SD} | | X | Mass fraction of soil in dust | -- | -- | 0.7 |
| AF _{s, D} | X | X | Absorption fraction (same for soil and dust) | -- | 0.12 | 0.12 |
| EF _{s, D} | X | X | Exposure frequency (same for soil and dust) | days/yr | 219 | 219 |
| AT _{s, D} | X | X | Averaging time (same for soil and dust) | days/yr | 365 | 365 |
| PbB _{adult} | PbB of adult worker, geometric mean | | | ug/dL | 7.2 | 7.2 |
| PbB _{fetal, 0.95} | 95th percentile PbB among fetuses of adult workers | | | ug/dL | 21.3 | 21.3 |
| PbB _i | Target PbB level of concern (e.g., 10 ug/dL) | | | ug/dL | 10.0 | 10.0 |
| P(PbB _{fetal} > PbB _i) | Probability that fetal PbB > PbB _i , assuming lognormal distribution | | | % | 27.2% | 27.2% |

* Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_s, K_{SD}).

When IR_s = IR_{s+D} and W_s = 1.0, the equations yield the same PbB_{fetal, 0.95}.

***Equation 1, based on Eq. 1, 2 in
USEPA (1996).**

| | | |
|------------------------------------|----------------------------------------------------------------|--|
| PbB_{adult} = | $(PbS * BKSF * IR_{s+D} * AF_{s,D} * EF_s / AT_{s,D}) + PbB_0$ | |
| PbB_{fetal, 0.95} = | $PbB_{adult} * (GSD_{11.645} * R)$ | |

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

| | | |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------|--|
| PbB_{adult} = | $PbS * BKSF * [(IR_{s+D}) * AF_s * EF_s * W_s] + [K_{SD} * (IR_{s+D}) * (1 - W_s) * AF_D * EF_D] / 365 + PbB_0$ | |
| PbB_{fetal, 0.95} = | $PbB_{adult} * (GSD_{11.645} * R)$ | |

Table 8.0

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version

date

05/19/03

| Exposure | Equation ¹ | | Description | Units | Final PRG Scenario | |
|-----------------------------|------------------------------|------------------|--------------------------------------------------------------------------|------------------------|--------------------|------------------|
| | Using Equation 1 | Using Equation 2 | | | Using Equation 1 | Using Equation 2 |
| PbB _{fetal, 0.95} | X | X | 95 th percentile PbB in fetus | ug/dL | 10 | 10 |
| R _{fetal/maternal} | X | X | Fetal/maternal PbB ratio | -- | 0.9 | 0.9 |
| BKSF | X | X | Biokinetic Slope Factor | ug/dL per ug/day | 0.4 | 0.4 |
| GSD _i | X | X | Geometric standard deviation PbB | -- | 2.1 | 2.1 |
| PbB ₀ | X | X | Baseline PbB | ug/dL | 1.4 | 1.4 |
| IR _S | X | | Soil ingestion rate (including soil-derived indoor dust) | g/day | 0.050 | -- |
| IR _{S+D} | | X | Total ingestion rate of outdoor soil and indoor dust | g/day | -- | 0.050 |
| W _S | | X | Weighting factor; fraction of IR _{S+D} ingested as outdoor soil | -- | -- | 1.0 |
| K _{SD} | | X | Mass fraction of soil in dust | -- | -- | 0.7 |
| AF _{S, D} | X | X | Absorption fraction (same for soil and dust) | -- | 0.12 | 0.12 |
| EF _{S, D} | X | X | Exposure frequency (same for soil and dust) | days/yr | 219 | 219 |
| AT _{S, D} | X | X | Averaging time (same for soil and dust) | days/yr | 365 | 365 |
| PRG | Preliminary Remediation Goal | | | ppm | 1,366 | 1,366 |

¹ Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_s,

K_{SD}).

When IR_s = IR_{s+D} and W_s = 1.0, the equations yield the same PRG.

*Equation 1, based on Eq. 4 in USEPA (1996).

| | |
|--------------------------------------------------------------------------------------------------------------|--|
| $PRG = \frac{([PbB_{95\text{fetal}}/(R*(GSD_{11.645}))]-PbB_0)*AT_{s,D}}{BKSF*(IR_{s+D}*AF_{s,D}*EF_{s,D})}$ | |
|--------------------------------------------------------------------------------------------------------------|--|

**Equation 2, alternate approach based on Eq. 4 and Eq. A-19 in USEPA (1996).

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|
| $PRG = \frac{([PbB_{fetal,0.95}/(R*(GSD_{11.645}))]-PbB_0)*AT_{s,D}}{BKSF*([(IR_{s+D})*AF_s*EF_s*W_s]+[K_{SD}*(IR_{s+D})*(1-W_s)*AF_D*EF_D])}$ | |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|

Table 9.0

Preliminary Remediation Goal for Antimony:

Chemical Conc. in soil (Cs) mg/kg
Ingestion Rate (IR) mg/day 50
Fraction Ingested (FI) unitless 1
Exposure Frequency (EF) days/year 250
Exposure Duration (ED) years 25
Conversion Factor (CF) kg/mg 1E-06
Body Weight (BW) kg 70
Averaging Time (Non-Cancer) AT_N days 9125

Preliminary Remediation Goal through the oral route:

$$Cs = HQ \times BW \times AT_N \times RfDo / FI \times IR \times EF \times ED \times CF$$
$$= 1 \times 70 \times 9125 \times 0.0004 / 1 \times 50 \times 250 \times 25 \times 0.000001$$

$$Cs = 820 \text{ mg/kg}$$

References

CH2M HILL, 2001. Human Health Risk Assessment. Ruston Foundry Site, Alexandria, Rapides Parish, Louisiana. (October 2001).

U.S. EPA , 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. Technical Review Workgroup for Lead. EPA-540-R-03-001.

Appendix B
Site-specific Synthetic Precipitation Leaching Procedure Criteria
for Ruston Foundry



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
SUPERFUND DIVISION
Louisiana/Oklahoma Section
1445 Ross Avenue
Dallas, Texas 75202-2733

August 18, 2004

To: Paul Kuhlmeier and Chet Culley
c/o Kansas City Southern Railway

From: Katrina Coltrain
Remedial Project Manager

RE: Ruston Foundry Superfund Site
Lead and Antimony Synthetic Precipitation Leaching Procedure

LDEQ and EPA have received and reviewed your analysis of the SPLP application for Ruston Foundry (Attachment 1). Below are comments related to your analysis.

A procedure for determining an action threshold for soil removal based upon a threat to ground water quality is provided in Appendix H of RECAP published by the Louisiana Department of Environmental Quality (October 20, 2003). The procedures used for Ruston are summarized on pages H-9 through H-19.

The first step: determine the classification of the uppermost saturated zone beneath the site.

Step two: identify the ground water standard in Table 3.

Step three: calculate a site specific $DF_{summers}$ (Eq. 61) or apply the default value of 20, and calculate a site-specific DAF (Eq. 65) in accordance with Sections H2.4 and H2.5. [DF; dilution factor and DAF; dilution and attenuation factor]. Under MO-1 the longitudinal DF is taken from the look-up table on page H-13. Under higher tiers (MO-2 and MO-3) a site-specific longitudinal DF may be calculated using equation 65 or the default look-up table may be used.

Step four: determine the product of $GW_{2or3} \times DF_{summers} \times DAF_{2or3}$

The parameters listed below were presented in your letter dated August 3, 2004. According to the letter, a minimum DAF of 11 was calculated when using the parameters listed below.

| | |
|------------------------------------------------|------------------------------------------------------|
| Groundwater Classification: | Class 2 |
| Groundwater Standard: | GW2 = 0.015 mg/l [lead] |
| DFsummers: | default = 20 |
| Dilution and Attenuation Factor (DAF2). | |
| POC to POE: | minimum distance approximately 517 feet |
| Sd: | thickness of saturated sequence is less than 10 feet |

| | |
|------------------------|--------------------------------------------------------------------|
| hydraulic conductivity | 2.5 x 10 ⁻⁴ cm/s [260 ft/yr Darcy groundwater velocity] |
| effective porosity | 35 percent for a silt-clay with sand. |

LDEQ/EPA agree with the parameters used for the ground water classification, the ground water standard, and the DF_{summers} . As for the parameters used to calculate the DAF_2 , we agree with the parameters used for hydraulic conductivity and effective porosity, however we disagree with the parameters used for S_d and the distance determined to exist between the point of compliance (POC) and the point of exposure (POE).

The POC is the sampling location positioned as near to the source as feasible without causing an adverse impact to groundwater. The SPLP values of 0.3 milligrams per liter (mg/L) for lead and 0.12 mg/l antimony are protective of soil leaching to ground water at or below the drinking water standard at the POC. Sample locations exceeding these values are scattered throughout the property and are not associated with a single definable 'source'. Given the lack of a single definable source at this site and the "scattered" nature of the analytical results, the highest SPLP result location should be defined as the POC. The POE is the nearest downgradient property. A DF_2 is applied to account for the physical processes of dilution and dispersion as the plume travels horizontally from the POC to the POE. Therefore, the distance to be used for the DF_2 calculation is the distance from this location (the POC) to the nearest downgradient property boundary (the POE). The maps provided show the sample location (Attachment 2) with the highest SPLP value (J2-RA), the ground water flow direction (east), and the distance line from the POC to the POE (Attachment 3). The estimated distance if the POE is the site boundary is 260 feet (purple line), and is estimated as 365 feet (purple line plus green line) if the POE is across the canal at the downgradient adjacent property boundary.

S_d is the estimated thickness of the dissolved contaminant of concern (COC) in the ground water within the permeable zone. There are two methods in RECAP to estimate S_d . One method is to calculate S_d . The other is to use the thickness of the impacted permeable zone. When no groundwater contamination is present, but an estimated S_d is still necessary for the purpose of calculating a Soil_{gw} or SPLP concentration protective of leaching to ground water, the minimum value of less than 5 feet should be used as a proxy S_d . There is no ground water contamination at the Ruston site, therefore the less than 5 feet should be used as the value for S_d .

Using the parameters from the August 3, 2004 analysis, you calculated the [lead] SPLP value protective of ground water to be 3.3 mg/L as presented in the following calculation. Based on this value, there are no [lead] SPLP data points that exceed ground water protection criteria, and therefore, no soil that needs to be addressed based on this value.

Comparison GW2 to SPLP results = $0.015 \text{ mg/l} \times 20 \times 11 = 3.3 \text{ mg/l SPLP}$
Maximum Ruston SPLP result = 1.81 mg/l Station J2-RA
Second highest SPLP value = 0.46 mg/l

Using the parameters defined in the LDEQ/EPA analysis, the lead SPLP value protective of ground water was determined to be 8.7 mg/L based on a distance of 260 feet and 8.7 mg/L based on a distance of 365 feet as presented in the following calculations. Based on these values, there are no lead SPLP data points that exceed ground water protection criteria, and therefore, no soil that needs to be addressed based on this value.

Comparison GW2 to SPLP results_{260 feet} = $0.015 \text{ mg/l} \times 20 \times 29 = 8.7 \text{ mg/l SPLP}$

Comparison GW2 to SPLP results_{365 feet} = $0.015 \text{ mg/l} \times 20 \times 29 = 8.7 \text{ mg/l SPLP}$

Using the parameters defined in this analysis, the antimony SPLP value protective of ground water was determined to be 3.5 mg/L based on a distance of 260 feet and 3.5 mg/L based on a distance of 365 feet as presented in the following calculations. Based on these values, there are no antimony SPLP data points that exceed ground water protection criteria, and therefore, no soil that needs to be addressed based on this value.

Comparison GW2 to SPLP results_{260 feet} = $0.006 \text{ mg/L} \times 20 \times 29 = 3.5 \text{ mg/L SPLP}$

Comparison GW2 to SPLP results_{365 feet} = $0.006 \text{ mg/L} \times 20 \times 29 = 3.5 \text{ mg/L SPLP}$

Based on the LDEQ/EPA evaluation, there are no SPLP data sample locations that exceed ground water protectiveness criteria. Therefore, the remedial action conducted at the site will be protective of ground water.

On the Application of Louisiana RECAP Protocols for Use of SPLP Results Related to Soil Removal

Ruston Superfund Site

The U.S. Environmental Protection Agency Region VI (EPA) has written into the proposed Explanation of Significant Differences (ESD) for the Ruston Superfund Site use of the SPLP leaching procedure as a benchmark for soil removal. To date dialogue with EPA has indicated that soil removal would be required where SPLP results exceed the drinking water standard for lead in soil. This interpretation of current RECAP is inaccurate. The process for establishing a soil removal criteria based upon a threat to underlying groundwater resources is provided below.

A procedure for determining a action threshold for soil removal based upon a threat to groundwater quality is provided in Appendix H of RECAP published by the Louisiana Department of Environmental Quality (October 20, 2003). Procedures are summarized at pages H-9 through H-19 of that appendix. The fundamental variables that affect a soil removal action level are; groundwater use classification, chemical properties, and physical properties of the host soil regime and underlying groundwater aquifer.

The first step in the assessment process is to determine the classification of the uppermost saturated zone beneath the site (see Figure 13 of RECAP).

Step two; identify the groundwater standard in Table 3. (see page H-19)

Step three, calculated a site specific $DF_{summers}$ (Eq. 61) or apply the default value of 20, and a site-specific DAF (Eq. 65) in accordance with Sections H2.4 and H2.5. [DF; dilution factor and DAF; dilution and attenuation factor]

Step four; determine the product of $GW_{2or3} \times DF_{summers} \times DAF_{2or3}$:

If the leach test results are less than or equal to the product of the three factors then the soil is protective of groundwater and no further action is required. (See p. H-19). As noted in the text of RECAP, "*Therefore, this pathway is eliminated from further consideration*". (at H-19)

Application to Ruston Property

Groundwater Classification. EPA interprets the uppermost saturated zone which is comprised of silty-clay with minor sand inclusions as a Class 2 (RI, p.2-27) although it also concludes that the subject sequence most likely cannot yield sufficient water to meet a Class 2 designation based upon on-site hydraulic testing by its contractor (at p. 3-10).

More likely than not, the uppermost water bearing zone would be receive a class 3 designation, however for purposes of this discussion the maximum designation of Class 2 published by EPA will be applied.

Groundwater Standard. Table 3 lists lead GW2 = 0.015 mg/l

DF_{summers} default = 20

Dilution and Attenuation Factor (DAF2). [from RECAP worksheet #18] Input includes distance from suspect SPLP observations to property boundary; minimum distance approximately 517 feet; thickness of saturated sequence from RI Section 3 is less than 10 feet, hydraulic conductivity from the RI is 2.5×10^{-4} cm/s [260 ft/yr Darcy groundwater velocity] and effective porosity of 35 percent for a silt-clay with sand. A minimum DAF of 11 is obtained.

Comparison GW2 to SPLP results = $0.015 \text{ mg/l} \times 20 \times 11 = 3.3 \text{ mg/l SPLP}$.

Maximum Ruston SPLP result = 1.81 mg/l Station J2-RA (see RI at Table 5-1.14 and Table M-17) Second highest SPLP value = 0.46 mg/l

Therefore a safety factor of almost double the threshold for SPLP related soil cleanup exists under the above set of parameters and more than 7 times greater the next highest single SPLP result. In fact, any combination of aquifer variables applied to the Domenico-Schwartz DAF derived factor resulting in a DAF of 6 or higher results in no SPLP related soil removal. In addition, the default DF_{summers} value for site conditions actually produces a DF2 factor greater than 30 and as high as 176.

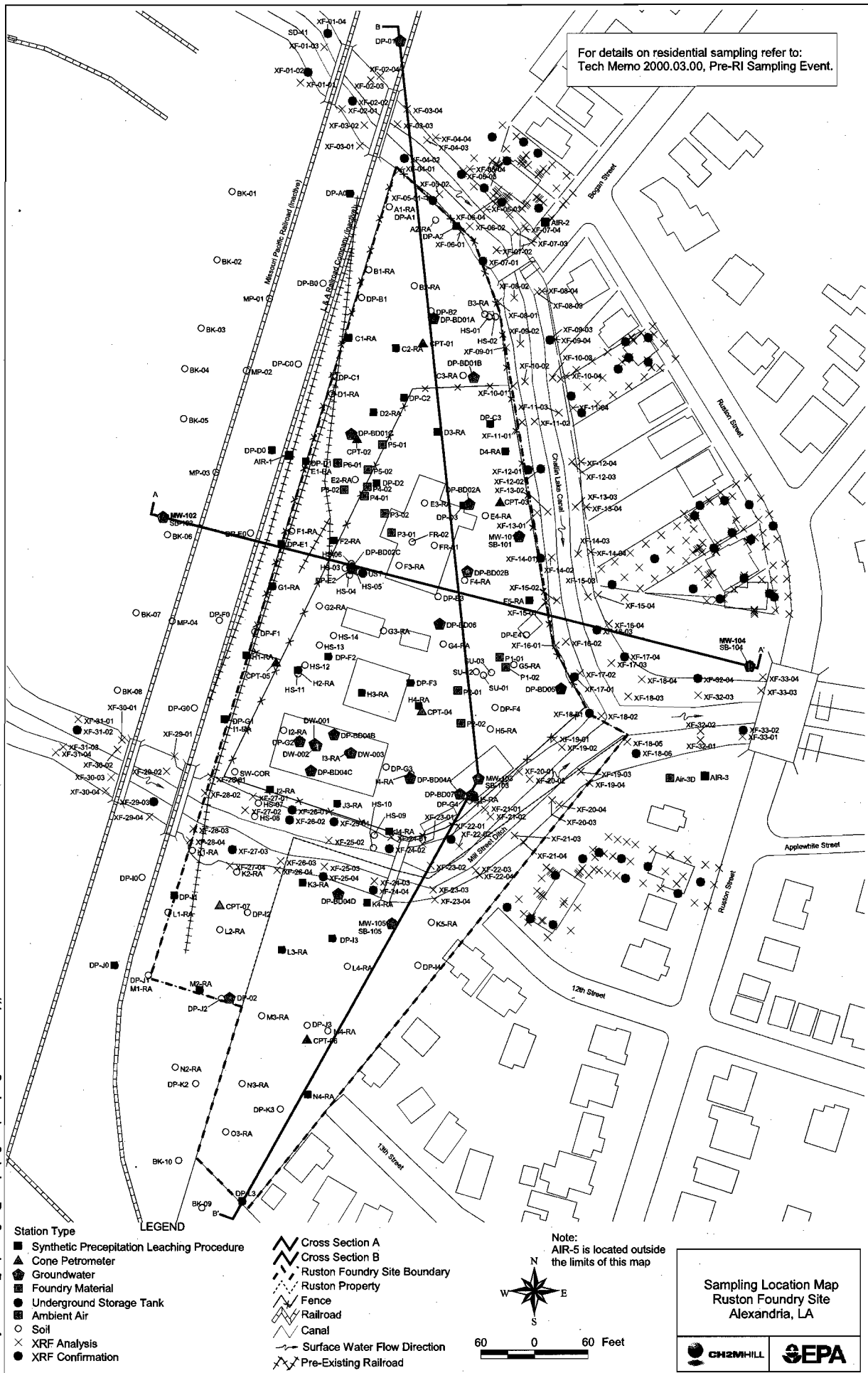
Summary

Properly applied RECAP procedures outlined in this technical note clearly demonstrate SPLP results from the Remedial Investigation do not produce any location which would require soil removal to be protective of groundwater. In reality the safety factor is much greater than the values calculated above, as no SPLP sample below 1 ft leached above the MCL for lead and EPA has described the site as underlain by heavy clay of low permeability.

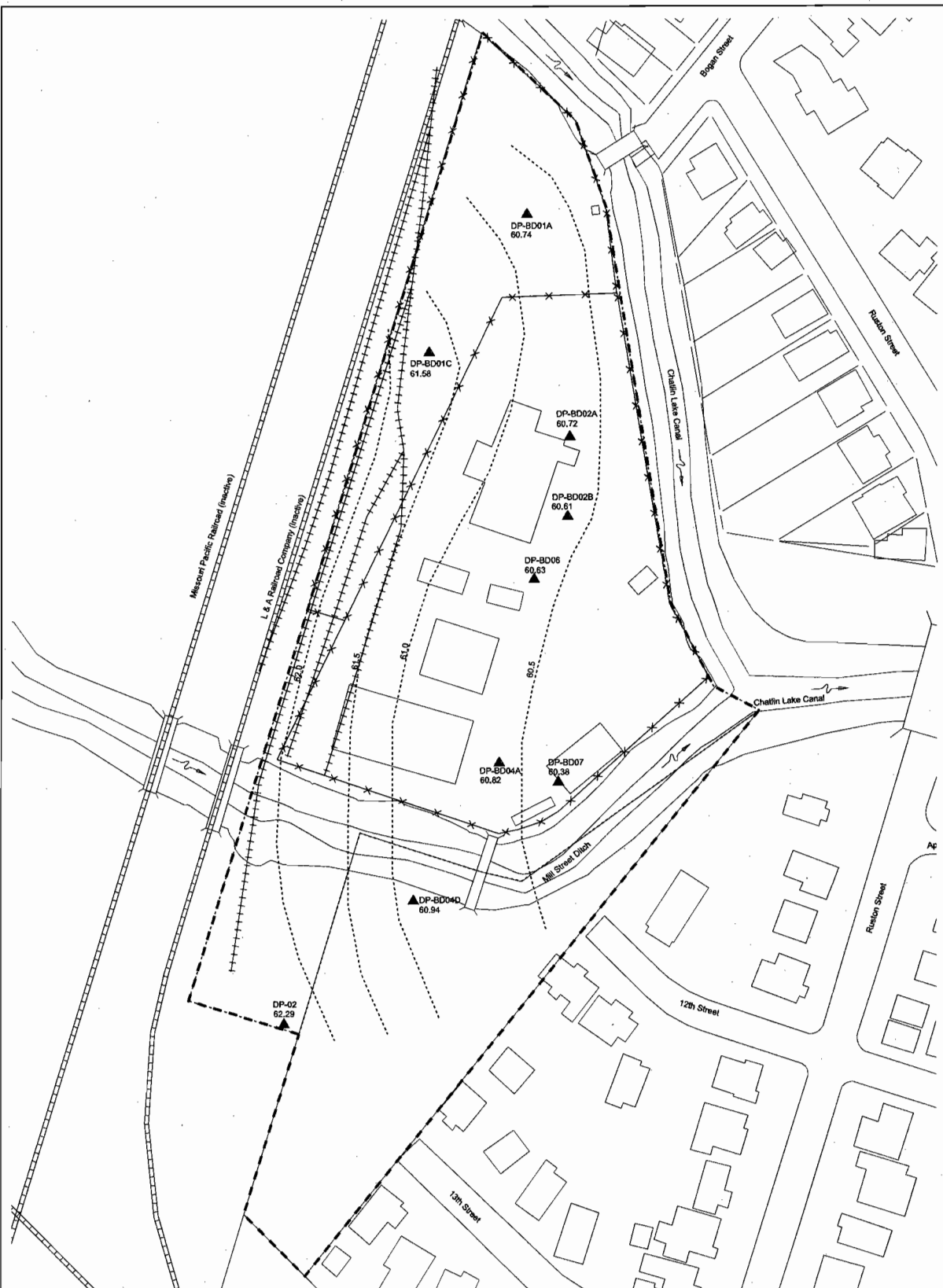
Lead has a known partition coefficient (K_d) with soil that has been measured as high as 7640 and a mean reported value of 99.¹ The K_d value is representative of how tightly a chemical will bind to a soil. Chemicals partition to fine grain soils, such as those found at the site, to a greater extent than to coarse grained soils. It is this phenomenon that has restricted lead to the uppermost one foot on a site which commenced operations almost 100 years ago.

¹ Dragun, J. 1998. The Soil Chemistry of Hazardous Materials, Amherst Scientific Publishers, Amherst, MA. P. 314-317.

T:\ISProj\RustonRI_Reporting\2-5_2-6.apr (Fig 2-5 (Sampling Location Map))

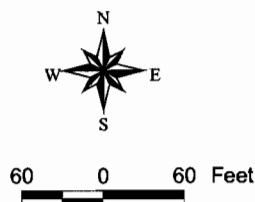


T:\Proj\ruston\2001\ap\nature&extent.apr (Fig3-5 (Water Level Elevation Map Temporary Monitor Wells))



LEGEND

- ▲ Oct. 15 Water Level Sample Location
- Ruston Foundry Site Boundary
- Ruston Property
- Pre-Existing Railroad
- Fence
- Canal
- Surface Water Flow Direction
- Groundwater Elevation Contour (CI=0.5 feet)



Water Level
Elevation Map
Temporary Monitor Wells
(October 15, 2000)
Ruston Foundry Site
Alexandria, LA



Appendix C
Estimated Soil Waste Volume
for Ruston Foundry

Lead and antimony samples that were taken during the remedial investigation were plotted using ArcView GIS. Based on the revised cleanup levels, only those sample locations that exceeded either 1400 milligrams per kilogram (mg/kg) lead or 820 mg/kg antimony were plotted. The areal extent was determined by approximating the half way point between a sample location that exceeded the criteria and a sample location that did not exceed the criteria. No data points below one foot exceeded either cleanup level; therefore, the depth of remediation is assumed to be one foot. Using ArcView, the estimated volume is 1,766 cubic yards (yd³).

The total estimated volume of hazardous waste is 1,300 yd³. This material will be stabilized and then disposed offsite. After stabilization, it is assumed that the material to be disposed offsite will have doubled due to the addition of stabilization materials. Therefore, the total volume to be disposed offsite is 2,600 yd³.

The volume of material to be shipped offsite is 4,366 yd³. This value is multiplied by a conversion factor of 1.15 to account for loose volume, the increase in weight due to the presence of lead, and the estimation of tons per cubic yard. For cost estimation, the total volume estimated to be shipped offsite is 5,021 tons.

Appendix D
Revised Remedial Action Cost Estimate
for Ruston Foundry

CAPITAL COSTS: Stabilization and Offsite Disposal

| DESCRIPTION | QTY | UNIT | UNIT COST | TOTAL | PERCENTILE | COMMENTS |
|-----------------------------------------------------------|------|-------------|-------------|-----------------------|------------|----------------------------------------------------|
| <u>Mobilization</u> | | | | | | |
| Construction Equipment and Facilities | 1 | each | \$14,344.00 | \$14,344.00 | Median | |
| Mobilization of Personnel | 1 | each | \$7,039.00 | \$7,039.00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$7,780.00 | \$7,780.00 | Median | |
| Setup/construct Temporary Facilities | 1 | each | \$60,773.00 | \$60,773.00 | Median | |
| <u>Monitoring, Sampling, Testing and Analysis</u> | | | | | | |
| Air Monitoring and Sampling | 1 | each | \$7,110.00 | \$7,110.00 | Median | |
| Soil Sampling | 120 | each | \$272.00 | \$32,640.00 | Median | 20 confirmation samples per acre |
| Laboratory Chemical Analysis | 120 | each | \$285.00 | \$34,200.00 | Median | 20 confirmation samples per acre |
| <u>Site Work</u> | | | | | | |
| Demolition | 1800 | square yard | \$21.00 | \$37,800.00 | Median | Concrete Pads |
| Clearing and Grubbing | 6.6 | acre | \$5,509.00 | \$36,359.40 | Median | |
| Water Well Plug and Abandon | 1 | each | \$2,048.00 | \$2,048.00 | NA | |
| <u>Surface Water Collection and Control</u> | | | | | | |
| Erosion Control | 6.6 | acre | \$13,137.00 | \$86,704.20 | Median | |
| <u>Air Pollution Collection and Containment</u> | | | | | | |
| Fugitive Dust/Vapor/Gas Emissions Control | 6.6 | acre | \$13,903.00 | \$91,759.80 | Median | |
| <u>Solids Collection and Containment</u> | | | | | | |
| Contaminated Soil Collection | 3066 | cubic yards | \$10.00 | \$30,660.00 | Median | Excavate all contaminated material (1300 + 1766) |
| <u>Drums/Tanks/Structures/Misc Demolition and Removal</u> | | | | | | |
| Tank Removal | 1 | each | \$6,376.00 | \$6,376.00 | Median | Remove/Dispose of UST/liquids |
| Structure Removal | 8608 | square foot | \$12.00 | \$103,296.00 | Median | Remove Buildings/Debris |
| Asbestos Abatement | 8000 | square foot | \$11.00 | \$66,000.00 | Median | Remove/Dispose of ACM |
| <u>Stabilization</u> | | | | | | |
| Pozzolan Process (Lime/Portland Cement) | 1300 | cubic yards | \$33.00 | \$42,900.00 | Median | Stabilize TCLP Waste |
| <u>Disposal (Commercial)</u> | | | | | | |
| Transport to Storage/Disposal Facility | 5021 | Ton | \$56.00 | \$281,176.00 | Median | RCRA D Facility (1766 soil + 2600 stabilized soil= |
| Disposal Fee and Taxes | 5021 | Ton | \$96.00 | \$482,016.00 | Median | 4366 * 1.15 conversion factor = 5021) |
| <u>Site Restoration</u> | | | | | | |
| Earthwork | 1766 | cubic yard | \$13.00 | \$22,958.00 | Median | Backfill Excavated Areas |
| Revegetation and Planting | 6.6 | acre | \$5,708.00 | \$37,672.80 | Median | Revegetate Excavated Areas |
| <u>Demobilization</u> | | | | | | |
| Removal of Temporary Facilities | 1 | each | \$5,288.00 | \$5,288.00 | Median | |
| Removal of Temporary Utilities | 1 | each | \$2,574.00 | \$2,574.00 | Median | |
| Final Decontamination | 1 | each | \$21,715.00 | \$21,715.00 | Median | |
| Demobilization of Construction Equipment | 1 | each | \$8,570.00 | \$8,570.00 | Median | |
| Demobilization of Personnel | 1 | each | \$5,997.00 | \$5,997.00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$4,701.00 | \$4,701.00 | Median | |
| <u>Reporting</u> | | | | | | |
| Remedial Action Report | 1 | each | \$10,000.00 | \$10,000.00 | | Estimated Unit Cost |
| <u>SUBTOTAL</u> | | | | \$1,550,457.20 | | |
| Contingency | | | 25% | \$387,614.30 | | |
| <u>SUBTOTAL</u> | | | | \$1,938,071.50 | | |
| Project Management | | | 5% | \$96,903.58 | | |
| Remedial Design | | | 8% | \$155,045.72 | | |
| Construction Management | | | 6% | \$116,284.29 | | |
| Site Information Database | 1 | each | \$4,800 | \$4,800.00 | | |
| TOTAL CAPITAL COST | | | | \$2,311,105.09 | | |

CAPITAL COSTS: Excavation and Offsite Disposal

| DESCRIPTION | QTY | UNIT | UNIT COST | TOTAL | PERCENTILE | COMMENTS |
|-----------------------------------------------------------|------|-------------|-------------|-----------------------|------------|----------------------------------------------------------------|
| <u>Mobilization</u> | | | | | | |
| Construction Equipment and Facilities | 1 | each | \$14,344.00 | \$14,344.00 | Median | |
| Mobilization of Personnel | 1 | each | \$7,039.00 | \$7,039.00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$7,780.00 | \$7,780.00 | Median | |
| Setup/construct Temporary Facilities | 1 | each | \$80,773.00 | \$80,773.00 | Median | |
| <u>Monitoring, Sampling, Testing and Analysis</u> | | | | | | |
| Air Monitoring and Sampling | 1 | each | \$7,110.00 | \$7,110.00 | Median | |
| Soil Sampling | 120 | each | \$272.00 | \$32,640.00 | Median | 20 confirmation samples per acre |
| Laboratory Chemical Analysis | 120 | each | \$285.00 | \$34,200.00 | Median | 20 confirmation samples per acre |
| <u>Site Work</u> | | | | | | |
| Demolition | 1800 | square yard | \$21.00 | \$37,800.00 | Median | Concrete Pads |
| Clearing and Grubbing | 6.6 | acre | \$5,509.00 | \$36,358.40 | Median | |
| Water Well Plug and Abandon | 1 | each | \$2,048.00 | \$2,048.00 | NA | |
| <u>Surface Water Collection and Control</u> | | | | | | |
| Erosion Control | 8.6 | acre | \$13,137.00 | \$86,704.20 | Median | |
| <u>Air Pollution Collection and Containment</u> | | | | | | |
| Fugitive Dust/Vapor/Gas Emissions Control | 6.6 | acre | \$13,903.00 | \$91,759.80 | Median | |
| <u>Solids Collection and Containment</u> | | | | | | |
| Contaminated Soil Collection | 3066 | cubic yards | \$10.00 | \$30,660.00 | Median | Excavate all contaminated material (1300 yd3 + 1766 yd3) |
| <u>Drums/Tanks/Structures/Misc Demolition and Removal</u> | | | | | | |
| Tank Removal | 1 | each | \$6,376.00 | \$6,376.00 | Median | Remove/Dispose of UST/liquids |
| Structure Removal | 8608 | square foot | \$12.00 | \$103,296.00 | Median | Remove Buildings/Debris |
| Asbestos Abatement | 6000 | square foot | \$11.00 | \$66,000.00 | Median | Remove/Dispose of ACM |
| <u>Disposal (Commercial)</u> | | | | | | |
| Transport to Storage/Disposal Facility | 2031 | Ton | \$56.00 | \$113,736.00 | Median | RCRA D Facility (1766 yd3 * 1.15 conversion factor = 2031 yd3) |
| Disposal Fee and Taxes | 2031 | Ton | \$96.00 | \$194,976.00 | Median | |
| Transport to Storage/Disposal Facility | 1495 | Ton | \$246.00 | \$367,770.00 | 75% | RCRA C Facility (1300 yd3 * 1.15 conversion factor = 1495 yd3) |
| Disposal Fee and Taxes | 1495 | Ton | \$214.00 | \$319,930.00 | 75% | |
| <u>Site Restoration</u> | | | | | | |
| Earthwork | 1766 | cubic yard | \$13.00 | \$22,958.00 | Median | Backfill Excavated Areas |
| Revegetation and Planting | 6.6 | acre | \$5,708.00 | \$37,672.80 | Median | Revegetate Excavated Areas |
| <u>Demobilization</u> | | | | | | |
| Removal of Temporary Facilities | 1 | each | \$5,288.00 | \$5,288.00 | Median | |
| Removal of Temporary Utilities | 1 | each | \$2,574.00 | \$2,574.00 | Median | |
| Final Decontamination | 1 | each | \$21,715.00 | \$21,715.00 | Median | |
| Demobilization of Construction Equipment | 1 | each | \$8,570.00 | \$8,570.00 | Median | |
| Demobilization of Personnel | 1 | each | \$5,997.00 | \$5,997.00 | Median | |
| Submittals/Implementation Plans | 1 | each | \$4,701.00 | \$4,701.00 | Median | |
| <u>Reporting</u> | | | | | | |
| Remedial Action Report | 1 | each | \$10,000.00 | \$10,000.00 | | Estimated Unit Cost |
| <u>SUBTOTAL</u> | | | | \$1,740,777.20 | | |
| Contingency | | | 25% | \$435,194.30 | | |
| <u>SUBTOTAL</u> | | | | \$2,175,971.50 | | |
| Project Management | | | 5% | \$108,798.58 | | |
| Remedial Design | | | 8% | \$174,077.72 | | |
| Construction Management | | | 6% | \$130,558.29 | | |
| Site Information Database | 1 | each | \$4,800 | \$4,800.00 | | |
| TOTAL CAPITAL COST | | | | \$2,594,206.09 | | |

| ANNUAL O&M COSTS | QTY | UNIT | UNIT COST | TOTAL COST | COMMENTS |
|---------------------------------------|-----|--------|-----------|-----------------|---------------------|
| <u>Site Maintenance</u> | | | | | |
| Mowing | 12 | months | 200 | \$2,400 | Estimated Unit Cost |
| Revegetation/refertilization/planting | 2 | acres | 5,708 | \$11,416 | Estimated Unit Cost |
| <u>Institutional Control</u> | | | | | |
| Conveyance Notice | 1 | notice | 3,600 | \$3,600 | Estimated Unit Cost |
| <u>O&M Report</u> | | | | | |
| Site Inspection | 1 | annual | 4,000 | \$4,000 | Estimated Unit Cost |
| <u>SUBTOTAL</u> | | | | \$21,416 | |
| Contingency | | 30% | | \$6,425 | |
| <u>SUBTOTAL</u> | | | | \$27,841 | |
| Project Management | | 5% | | \$1,392 | |
| Technical Support | | 10% | | \$2,784 | |
| TOTAL ANNUAL O&M COSTS | | | | \$32,017 | |

| PERIODIC COSTS | QTY | UNIT | UNIT COST | TOTAL COST | COMMENTS |
|--------------------------------------|-----|---------|-----------|------------------|----------------------------------------------|
| <u>Five-year Reviews</u> | | | | | |
| Report, IC, and update Site O&M Plan | 1 | Year 5 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Report, IC, and update Site O&M Plan | 1 | Year 10 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Report, IC, and update Site O&M Plan | 1 | Year 15 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Report, IC, and update Site O&M Plan | 1 | Year 20 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Report, IC, and update Site O&M Plan | 1 | Year 25 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Report, IC, and update Site O&M Plan | 1 | Year 30 | \$20,000 | \$20,000 | 1 Five-year Report, IC, and updated O&M Plan |
| Well Abandonment | 5 | 5 | 460 | \$2,300 | |
| Contingency | | 5% | | \$575 | |
| TOTAL PERIODIC COSTS | | | | \$122,875 | |

| STABILIZATION PRESENT VALUE ANALYSIS | | | | | |
|--------------------------------------------|---------|----------------|------------------------|-------------------------|-----------------------|
| | YEAR | TOTAL COST | TOTAL COST PER YEAR | DISCOUNT FACTOR (7%) | PRESENT VALUE |
| Capital Cost | 0 | \$2,311,105.00 | | 1.00 | \$2,311,105.00 |
| Annual O&M Cost | 1 TO 30 | \$960,510.00 | \$32,017.00 | 12.409 | \$397,298.95 |
| Periodic Cost | 5 | \$20,000.00 | \$20,000.00 | 0.713 | \$14,260.00 |
| Periodic Cost | 10 | \$20,000.00 | \$20,000.00 | 0.508 | \$10,160.00 |
| Periodic Cost | 15 | \$20,000.00 | \$20,000.00 | 0.362 | \$7,240.00 |
| Periodic Cost | 20 | \$20,000.00 | \$20,000.00 | 0.258 | \$5,160.00 |
| Periodic Cost | 25 | \$20,000.00 | \$20,000.00 | 0.184 | \$3,680.00 |
| Periodic Cost | 30 | \$22,875.00 | \$22,875.00 | 0.131 | \$2,996.63 |
| ESTIMATED REMEDIAL ALTERNATIVE COST | | | | | \$2,751,900.58 |

| EXCAVATION AND DISPOSAL PRESENT VALUE ANALYSIS | | | | | |
|------------------------------------------------|---------|----------------|------------------------|-------------------------|-----------------------|
| | YEAR | TOTAL COST | TOTAL COST PER YEAR | DISCOUNT FACTOR (7%) | PRESENT VALUE |
| Capital Cost | 0 | \$2,594,206.00 | | 1.00 | \$2,594,206.00 |
| Annual O&M Cost | 1 TO 30 | \$960,510.00 | \$32,017.00 | 12.409 | \$397,298.95 |
| Periodic Cost | 5 | \$20,000.00 | \$20,000.00 | 0.713 | \$14,260.00 |
| Periodic Cost | 10 | \$20,000.00 | \$20,000.00 | 0.508 | \$10,160.00 |
| Periodic Cost | 15 | \$20,000.00 | \$20,000.00 | 0.362 | \$7,240.00 |
| Periodic Cost | 20 | \$20,000.00 | \$20,000.00 | 0.258 | \$5,160.00 |
| Periodic Cost | 25 | \$20,000.00 | \$20,000.00 | 0.184 | \$3,680.00 |
| Periodic Cost | 30 | \$22,875.00 | \$22,875.00 | 0.131 | \$2,996.63 |
| ESTIMATED REMEDIAL ALTERNATIVE COST | | | | | \$3,035,001.58 |

Appendix E

Institutional Control for Ruston Foundry

The Selected Remedy for Ruston Foundry will employ institutional controls in the form of a conveyance notice and a local zoning designation to inform the public of Site conditions and restrictions of the site to industrial use. Specifically, LDEQ, in accordance with Louisiana Revised Statute 30:2039 (2000) and Louisiana Administrative Code title 33 Part 5 § 3525 (2002), will require the owner(s) of the facility property to record a notice in the mortgage and conveyance records of Rapides Parish for the Site and if land use changes from industrial to non-industrial, the property owner shall notify the LDEQ within 30 days and the area shall be reevaluated to determine if conditions are appropriate for the proposed land use. A full copy of the notice must also be filed with the Rapides Parish zoning authority and any other authority having jurisdiction over local land use.

It will be the responsibility of the property owner, the local governing authority, and LDEQ to ensure that the IC is present in the deed record and remains in perpetuity and that the local zoning designation remains industrial. Enforcement of this IC and the zoning designation will be the responsibility of the State and the local governing authorities.

Appendix F
Letter from LDEQ



State of Louisiana

Department of Environmental Quality



KATHLEEN BABINEAUX BLANCO
GOVERNOR

MIKE D. McDANIEL, Ph.D.
SECRETARY

SEP 09 2004

Ms. Wren Stenger, Chief
Louisiana/Oklahoma/New Mexico Branch (6 SF-L)
US EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

RE: Request for Input from Louisiana on Explanation of Significant Differences
Ruston Foundry Site, CERCLIS #: LAD 985 185 107; AI 12443
Bogan Street, Alexandria, Rapides Parish Louisiana

Dear Ms. Stenger:

The Louisiana Department of Environmental Quality, Remediation Services Division (LDEQ-RSD) has reviewed the drafts and final version of the Explanation of Significant Differences (ESD) transmitted electronically to our office on or about September 1, 2004.

The LDEQ-RSD does not have any comments on the remedies selected and described in the ESD. The remedies were selected to protect human health and the environment for the future uses described in the ESD.

Thank you for allowing us the opportunity to review and comment on the Explanation of Significant Differences. We look forward to continuing to work together as this former foundry waste site is cleaned up and returned beneficial productive use.

If you have any questions, please feel free to contact me at (225) 219-3192.

Sincerely,

Keith L. Casanova, Administrator
Remediation Services Division

nl

c: LDEQ File Scanning Room 144- IAS



Appendix G
Response to Comments on the
Ruston Foundry ESD

The concerns of the community should be considered when selecting a remedial alternative. Much information has been exchanged with the area residents and community leaders concerning the Site. The EPA held a Public Meeting (August 10, 2004) in Alexandria, Louisiana, to provide information to the public regarding cleanup activities. There is also an Administrative Record file at all information repositories that contains documents supporting this Explanation of Significant Differences. This Administrative Record file includes a transcript of the Public Meeting, which records the complete discussions related to the public comments. The comments received during the comment period (July 28 through August 31, 2004) are summarized below.

Oral Comments Submitted during the Public Meeting

Comment 1. My concern is that there should be a different route in and out of the area where it goes around rather than through the neighborhood. The bridge at the end of Bogan Street is not safe for truck traffic, there is a school located at the end of Bogan, and there are children that play in this area.

Response 1, Darrell Williamson, City of Alexandria. The railroad could utilize the property we bought from them and cross their former property [to the west]. One other alternative is utilization of the old railroad right-of-way that comes off of Third Street.

Response 1, EPA. The route to be used for transporting site waste is important. Before the route is finalized, discussions will be held with the community to determine its location.

Response 1, Chester Culley, KCS. Use of the railroad right-of-way would not be feasible because the trucks would not be able to cross the railroad bridges. However, if there is another route across the property using the railroad right-of-way, we will look into it. A bridge engineer will come out and inspect the bridge at the end of Bogan to ensure that it is safe for truck traffic before it is used. Two things to consider if using the railroad right-of-way would be the increase in cost associated with construction to support the trucks, rebuilding of bridges, etc. and the increase in risk of an event occurring because the right-of-way is not designed for truck traffic. Another possibility is to transport the material by rail, however, the trouble is that most of the facilities are located a distance from the site and would require transfers of material between rail lines. We would prefer to sit down with the community representatives to identify how we're going to transport the waste and identify the hours of transportation. At the same time we discuss the transportation route, we would like to discuss the communications plan which will identify contact persons for both KCS and the community.

Comment 2, Charles Smith, City Council. Before they start hauling, we would need to know what type of equipment or truck they're going to use. These trucks should be covered and not open air so that there is no dust or exposure to our community.

Response 2, EPA. Part of the work plan being developed for the removal of waste will take transportation of the waste into consideration. Before leaving the site, the outside of all trucks will be cleaned (decontaminated) so as not the transfer contamination from the site, and the trucks will be securely covered to contain waste within the bed of the truck.

Response 2, Chester Culley, KCS. The trucks that will be used for waste transportation will be lined with plastic. The plastic liner will be placed along the bottom of the truck bed, the waste will be placed in the bed on top of the liner, and then the liner will be folded over the waste to contain it. Before leaving the site, the truck will be inspected and cleaned.

Comment 3. My concern is that for some of the material that [will] be moved offsite, that stabilization occur before moving.

Response 3, EPA. Approximately 1,300 cubic yards of hazardous waste has been estimated to exist on the site. Stabilization is the first consideration for addressing the waste, however, during discussions related to remedial activity, stabilization may not be the most effective, efficient, and productive process for removing the waste from the site. Because of this, the ESD has incorporated a contingency remedy that is excavation and offsite disposal. Should the process of excavation and offsite disposal prove to be the more appropriate method of addressing the hazardous waste, then stabilization will no longer be required. Supporting data and information on the application of the contingency remedy will be required before the contingency is implemented.

Comment 4. My concern is that asbestos is located on the site, and we know that asbestos can get into the air and then into people's lungs. We would like the persons removing the asbestos to be EPA certified and that air monitoring be done to detect potential debris so that the citizens in that area can be forewarned.

Response 4, EPA. The volume of asbestos is estimated to be approximately 22 cubic yards and was found in siding/roofing type material located on the ground surface. The asbestos will be accumulated and disposed by Louisiana licensed certified asbestos personnel. During removal and preparation for disposal, the air will be monitored to ensure that no asbestos is released.

Comment 5. What about the noise level? I know with progress we have to have some noise, but for those people that live next to the site this will be an inconvenience for them.

Response 5, EPA. Every attempt will be made to limit the noise levels and to work within the specified construction hours. Before the construction hours are finalized, discussions will be held with the community.

Comment 6. What about the underground storage tank?

Response 6, EPA. The underground storage tank, its contents, and any surrounding contaminated soil will be removed and disposed in an offsite landfill. This item was identified in the 2002 Record of Decision and remains part of this ESD.

Response 6, Chester Culley, KCS. The underground storage tank will be addressed as part of the remedy. This includes its contents, the tank, and includes removing any subsurface soils that were impacted due to leaking. If the tank is full of some compound, it will be pumped out and transported for recycle, and then the tank will be removed, decontaminated, and cut up. The sampling protocol for the State and EPA will be followed for the subsurface soils, and the hole will be filled with imported clean soil.

Written Comments Submitted During the Comment Period

Written comments were submitted by KCS in a letter dated August 31, 2004 and are summarized below.

Comment 7. Throughout the ESD, EPA refers to KCS as "the responsible party." However, KCS has consistently denied that it is a liable party under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and no court has found that KCS is a liable party. Additionally, this reference to KCS as "the responsible party" implies that there are no other potentially responsible parties for the response costs at the Site, when in fact there are other potentially responsible parties for the contaminants at the Site. KCS requests that EPA refer to KCS in the ESD as The Kansas City Southern Railway Company, instead of "the responsible party."

Response 7, EPA. The ESD will be revised to incorporate the company name, Kansas City Southern Railway Company. The term responsible party will be revised to potentially responsible party.

Comment 8. KCS would like EPA to clarify that the reference on page eight in the first sentence of the second full paragraph is based on a residential scenario. KCS asks that the sentence be revised as follows "Because waste will be left onsite above levels that allow for unlimited use and unrestricted exposure under a residential use scenario, . . ."

Response 8, EPA. The policy threshold for determining whether institutional controls are appropriate at a site is whether the site can support unlimited use and unrestricted exposure regardless of the reasonably anticipated future land use. The unlimited use and unrestricted exposure threshold is often confused with the concept of a "residential cleanup"; however, these are not the same. The Site is restricted to industrial use only; therefore, the above referenced sentence is consistent with policy and guidance and will not be revised as requested.

Comment 9. On page eight in the second full paragraph, EPA states that groundwater monitoring will be required as part of the O&M for the site. However, groundwater monitoring is unnecessary because the data for ground water, surface water, and sediment did not have carcinogenic risk that exceeded the

risk range or non-carcinogenic risks that exceeded 1. Also, data shows that all hazardous substances are below the Maximum Contaminant Levels for ground water. Basically, the data has established that further ground water monitoring is not necessary because geologically and hydrogeologically there is no method for contaminant transport to ground water. In a July 23, 2004 email correspondence from Ms. Veilleux to Mr. Tripp, Ms. Veilleux stated that ground water monitoring would not be part of the O&M for the site and that the wells should be plugged and abandoned in accordance with Louisiana state laws during the Remedial Activities at the Site. In our conference call with EPA on July 27, EPA agreed that O&M would not include ground water monitoring and that the final ESD would be changed accordingly.

Response 9, EPA. The ESD will be revised to indicate that ground water monitoring will not be part of O&M activity. Because Site soils do not exceed the site-specific SPLP cleanup values protective of ground water and the risk assessment determined that no complete exposure pathway exists, the ground water will not be monitored and the existing wells will be plugged and abandoned according to LDEQ requirements.

Comment 10. On page eight in the second full paragraph, EPA states that site reports are to be conducted twice a year, instead of annually. In our conference call on July 27, EPA agreed that semi-annual reports would not be necessary and that annual reports would be sufficient given the minimal O&M required for the site. We ask that the final ESD be changed accordingly.

Response 10, EPA. The ESD will be revised to show that O&M documentation will need to be submitted annually not semi-annually.

Comment 11. In Appendix D, EPA provides the conveyance notice language that will be filed as a part of the Institutional Controls for the subject Site. This notice contains some inflammatory language regarding the risks posed by constituents that will remain at the site. The language is also alarming insofar as it states that moving "any" soil may subject that person to CERCLA liability. In addition, the notice language also incorrectly states that ground water monitoring will be required as part of the O&M for the Site, which is contrary to DOJ's July 23, 2004 email correspondence (as discussed above in Comment 9). This specific notice language it is not required by either EPA guidance (i.e., EPA's Model Environmental Protection Easement (December 1997)) or the Louisiana statutes and regulations cited in Appendix D. In addition to the problematic notice language, EPA also states in Appendix D that it will be the responsibility of "the Responsible Party" (i.e., KCS) to ensure that the Institutional Control is present in the deed record and remains in perpetuity. However, KCS cannot be responsible for these tasks given that KCS does not own the property. KCS believes that it is unnecessary to identify the precise notice language for the institutional controls at this time, given that the remedy has yet to be implemented at the Site. The text of the ESD is sufficient to inform the public of the need for and basic elements of the institutional controls to be implemented at the Site. Consequently, KCS requests that EPA remove Appendix D from the document.

Response 11, EPA. The references to ground water O&M activities have been deleted. Upon further review of the site sampling data, LDEQ applied the procedure for determining a site-specific cleanup

value for soil removal based upon a threat to ground water quality provided in Appendix H of RECAP (see Section VI and Appendix B). Because Site soils do not exceed the site-specific calculated SPLP cleanup value protective of ground water and the risk assessment determined that no complete exposure pathway exists, the ground water will not be monitored and the existing wells will be plugged and abandoned according to LDEQ requirements. However, annual O&M activities will include, but are not limited to, Site inspection and maintenance, IC inspection and enforcement, and Site reports. Also, reviews of the remedy by EPA will be conducted no less than every five years to ensure that the remedy is functioning as designed, and remains protective of human health and the environment.

The references to the responsibility of PRP to ensure that the Institutional Control is present in the deed record and remains in perpetuity has been deleted. It is the responsibility of the property owner to file, in accordance with state law, a notation on the deed to the property or on some other instrument which is normally examined during the title search, that will in perpetuity, notify any potential purchaser of the property use and restrictions. This notice has to be filed with the local zoning authority or the authority with jurisdiction over local land use and with the administrative authority.

The comment indicates that the specific notice language is not required by EPA guidance or the LA statutes that are cited. According to the September 2000, EPA guidance Institutional Controls: a Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups, ICs should be evaluated in the same level of detail as other remedy components. ICs are considered response actions under CERCLA, must meet all statutory requirements, and are subject to the nine evaluation criteria outlined in the NCP (40 CFR 300.430 (e)(9)(i)) for CERCLA cleanups. However, before applying these criteria and in order to properly and effectively evaluate the IC, the following determinations should be made:

- Objective—Clearly state what will be accomplished through the use of ICs.
- Mechanism—Determine the specific types of ICs that can be used to meet the various remedial objectives.
- Timing—Investigate when the IC needs to be implemented and/or secured and how long it must be in place.
- Responsibility—Research, discuss, and document any agreement with the proper entities on exactly who will be responsible for securing, maintaining and enforcing the control. It might be useful to secure a written statement of the appropriate entities' willingness to implement, monitor, and enforce the IC prior to the signature of the remedy decision document.

The references to Louisiana Revised Statute (LA R.S.) 30:2039 Recordation of Notice of Solid or Hazardous Waste Site by Landowner (2000) and Louisiana Administrative Code (LAC) title 33 Part 5 § 3525 Post-Closure Notices (2002) are appropriately cited and describe the process for and information to be included in the IC. Specifically, LA R.S. 30:2039 states "If a landowner has actual or constructive knowledge that his property has been identified by the department as an inactive or abandoned solid waste landfill or hazardous waste site, he shall cause notice of the identification of the location of the waste site to be recorded in the mortgage and conveyance records of the parish in which the property is located." It also states that "If any person wishes to remove such notice, he shall notify the secretary prior to requesting the removal from the clerk of court in the parish where the property is

located. The request shall specify the facts supporting removal of the notice, including any evidence that the waste no longer poses a potential threat to health or the environment. Upon finding that the waste no longer poses a potential threat to health or the environment, the secretary shall approve removal of the notice.” In addition, LAC title 33 Part 5 § 3525, states that “Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must record, in accordance with state law, a notation on the deed to the facility property or on some other instrument which is normally examined during the title search that will in perpetuity notify any potential purchaser of the property that the land has been used to manage hazardous wastes, that its use is restricted under LAC 33:V.Chapter 35; and that the survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by LAC 33:V.3517 and this Section have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the administrative authority.” Although the site will not have a hazardous waste disposal unit, hazardous substances will remain onsite and require restrictions for industrial use only.

Comment 12. In a memo from Ms. Coltrain of EPA to KCS dated August 18, 2004, EPA concluded that based on the Louisiana Department of Environmental Quality/EPA evaluation, there are no Synthetic Precipitation Leaching Procedure (SPLP) data sample locations that exceed ground water protection criteria for lead and antimony at the Site. Therefore, EPA has concluded that no soil at the Site needs to be addressed based on the SPLP value for lead and antimony. KCS asks that the final ESD be modified to reflect EPA’s conclusions in this regard and that the ESD be revised to inform the public that Remedial Objectives 3 and 4 have been met.

Response 12, EPA. The ESD will be revised to indicate that the SPLP results were further analyzed using the Louisiana Risk Evaluation/Corrective Action Program (RECAP, October 20, 2003). The site-specific SPLP cleanup value protective of ground water for lead was calculated to be 8.7 mg/L and for antimony was calculated to be 3.5 mg/L (Appendix B). Based on this evaluation, there are no Ruston SPLP sample locations that exceed ground water protectiveness cleanup values.

Comment 13. KCS has determined that off-site disposal and/or recycling of the iron slag and sand material is a more cost-effective alternative than on-site stabilization followed by off-site disposal of those materials. Also, KCS has determined that on-site stabilization of the iron slag and sand would create more air borne dust than simply removing these materials for off-site disposal and/or recycling. Consequently, KCS has determined that off-site disposal and/or recycling is more protective from a short-term health based risk standpoint than on-site stabilization followed by off-site disposal. KCS requests that the final ESD reflect that on-site stabilization is no longer an option and that the iron slag and sand materials will be taken directly off-site for disposal and/or recycling.

Response 13, EPA. The contingency remedy will only be implemented once data and information supporting its use has been evaluated by the regulatory agencies. Though KCS has made this determination, data and information supporting this change has not been presented to the regulatory agencies for review and discussion. Determination of the appropriate method to be used in addressing

the hazardous waste will be made after the regulatory agencies have had time to review and discuss the treatability evaluation conducted by KCS.

APPENDIX C

*To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)*

Statement of Work for Remedial Design and Remedial
Action at the Ruston Foundry Superfund Site,
Alexandria, Louisiana

Statement of Work for Remedial Design and Remedial Action at the Ruston Foundry
Superfund Site, Alexandria, Louisiana

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STATEMENT OF WORK FOR REMEDIAL DESIGN and REMEDIAL ACTION
Ruston Foundry Superfund Site
September 2007

A. Introduction

The Ruston Foundry Site is an abandoned metal foundry that operated from 1908 until 1985 and is located on the southeast side of Alexandria, Rapides Parish, Louisiana with geographical coordinates of 31°17'56" north latitude and 92°26'18" west longitude (E&E, 1998). The Site is located in an urban area with mixed development within the city limits of Alexandria. The Site is not currently operational, and there are no onsite workers. The nearest resident is located approximately 80 feet northwest of the Site (ATSDR, 2001), and approximately 6,000 residents are located within a one-mile radius of the Site. There is a recreational park located approximately 1/4-mile southeast of the Site, and schools identified within one mile of the Site include Peabody Elementary, Peabody Magnet, Jones Street Junior High, Bolton High, South Alexandria Sixth Grade School, and Alma Redwine Primary School.

The Ruston Foundry property is 4.98 acres and the Louisiana Pine Products (LPP) property is 1.62 acres for a total Site acreage of 6.6 acres. The LPP property is part of the Site due to Ruston conducting historical operations on that property. The Ruston Foundry property consists primarily of dilapidated structures and building foundations overgrown with thick brush, and the LPP property is a flat grassy area. The Site is bordered by a series of abandoned railroad tracks to the west. Chatlin Lake Canal borders the Ruston property to the northeast and east, and Mill Street Ditch borders the Ruston property to the south-southeast and LPP to the north. Residential property is located to the north and east of the Ruston Foundry property across the canal and to the east and south of LPP. Historical and active industrialized areas lie further west and north of the Site.

Ruston Foundry operated from 1908 until 1985. From the beginning of operation until October 1983, it was operated under the name Ruston Foundry and Machine Shops, Ltd. In 1983, the facility was reincorporated and began operating under the name Ruston Foundry and Machine Shops, Inc. In November 1990, the Ruston Foundry and Machine Shops, Inc. corporation charter was revoked by the Louisiana Secretary of State for failure to file its corporate annual report (EPA, 1998).

Foundry operations resulted in metals contaminated waste which was dispersed throughout the property as fill material. As a result of this disposal activity, foundry-derived process wastes (slag, foundry sand piles, metal scrap, and castings) cover most of the Site and have contaminated the soil. Contaminants are found in the canal sediments and surface water due to runoff of Site materials. Source materials in the form of drums of sludge were removed from the Site in 1999, during the time-critical removal action.

B. Purpose

The purpose of this Statement of Work (SOW) is to set forth the framework and requirements for the Remedial Design (RD) of the selected remedy as defined in the Record of Decision (ROD) issued on June 24, 2002, amended September 28, 2004, by an Explanation of Significant Differences (henceforth referred to collectively as the 'ROD/ESD') and requirements for implementing the Remedial Action (RA) at Ruston Foundry Superfund site (site) in accordance with the objectives of the RD. The RD is generally defined as those activities to be undertaken by the contractor to develop the final plans and specifications, general provisions, and special requirements necessary to translate the ROD/ESD into the remedy to be constructed under the remedial action (RA) phase. The RA is generally defined as the implementation phase of site remediation or construction of the remedy, including necessary operation and maintenance, performance monitoring, and special requirements. The RA is based on the RD to achieve the remediation goals specified in the ROD/ESD. This SOW is designed to provide the framework for conducting the RD/RA activities at the site. The goal is to complete and deliver the final design and remedial action plans and specifications within three months after the Effective Date of the Consent Decree.

Settling Defendant shall perform all Remedial Design and Remedial Action activities required by the Consent Decree and this Statement of Work. Activities conducted pursuant to the Consent Decree and the Statement of Work shall achieve the Applicable or Relevant and Appropriate Requirements (ARARs) and Performance Standards selected in the ROD/ESD, including cleanup standards, standards of control, quality criteria, and other substantive requirements, criteria or limitations set forth in the ROD/ESD. Settling Defendant shall carry out the Work in accordance with work plans approved in advance by EPA.

C. Overview of Selected Remedy and Performance Standards

1. Remedial Action Objectives

Remedial action objectives (RAOs) were developed for the site for chemical contaminant sources that pose a non-carcinogenic hazard to human health and the environment based on site-specific risk calculations and such that Applicable or Relevant and Appropriate Requirements (ARARs) are met. The RAOs refer to specific sources, contaminants, pathways, and receptors and are listed in the ROD/ESD.

2. Performance Standards

The Performance Standards are those cleanup standards, standards of control, and other substantive requirements, criteria or limitations set forth in the ROD/ESD for the site. Performance Standards include but are not limited to the remedial action objectives set forth in the ROD/ESD, the remedial action goals set forth in the ROD/ESD, or other measures of achievement of the goals of the Remedial Action.

3. Remedy Description

The selected remedy is a comprehensive approach and will address the Site as one operable unit. Due to the previous removal of drums, the remedy addresses all current and potential future risks caused by soil, sediment, and hazardous waste contamination. The remedial measures will prevent exposure to hazardous waste and soil and sediment contaminated with hazardous substances. The principal threat waste at the Site will be addressed through the excavation and offsite disposal of contaminated soil and sediment, removal and offsite disposal of asbestos containing material and the underground storage tank, and the excavation, treatment, and offsite disposal of hazardous wastes.

Based on the ROD/ESD, the major components of the remedy are:

- a. **Stabilization** - Approximately 1,300 cubic yards (yd³) of hazardous waste will be excavated and stabilized. The material will be stabilized until sampling verifies that it no longer exceeds the Toxicity Characteristic Leaching Procedure (TCLP) for lead. After verification, the waste will be disposed offsite at a Resource Conservation and Recovery Act (RCRA) regulated Subtitle D facility.
- b. **Asbestos Containing Material (ACM)** - Materials will be consolidated onsite, contained, and transported offsite to a disposal facility licensed to accept ACM. Methods to control airborne dispersion of asbestos will be implemented during remediation. The estimated total volume of material is 22 yd³.
- c. **Underground Storage Tank (UST)** - The UST, its contents, and the surrounding petroleum wastes will be characterized during the remedial design to determine whether the contents will be cleaned up under CERCLA or Oil Pollution Act (OPA) authority. The surrounding polychlorinated biphenol (PCB) contaminated soils will be removed and disposed offsite in accordance with all federal, state, and local regulations. Total volume of tank contents is estimated at 5,000 gallons. The volume of associated contaminated soil is included in the soil/sediment estimated volume of 15,000 yd³.
- d. **Building debris and water supply well** - The onsite well will be plugged and abandoned in accordance with all federal, state, and local regulations. Portions of the Site will be cleared, where necessary, and the existing buildings and foundations will be demolished, removed and disposed offsite.

- e. Soil/sediment - Approximately 15,000 yd³ of lead and antimony contaminated soils and sediment will be excavated and disposed offsite in a RCRA Subtitle D facility.
- f. Air Monitoring - During remedial action, efforts will be made to control dust and run-off to limit the amount of materials that may migrate to a potential receptor. Air monitoring will be conducted during times of remediation to ensure that control measures are working to regulate Site emissions.
- g. Short-term monitoring - Monitoring of the surface water and ground water during remedial action may be necessary to ensure that runoff control measures are working.

The Explanation of Significant Differences revised soils volumes based on a revised risk assessment for commercial/industrial; determined that cleanup based on protection of ground water exceedances is not necessary; determined ground water monitoring during RA is not necessary; and, included a contingency remedy of Excavation and Offsite disposal which was presented in the 2002 Proposed Plan.

D. General Requirements

- 1. The Settling Defendant shall conduct the RD/RA in accordance with this SOW and consistent with the ROD/ESD, the *Remedial Design/Remedial Action (RD/RA) Handbook* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER), 9355.0-04B, EPA 540/R-95/059, June 1995), and all other guidance used by EPA in conducting an RD and RA. A list of primary guidance and reference material is attached (Attachment 1). In all cases, the Settling Defendant shall use the most recently issued guidance.
- 2. All plans, reports, and other deliverables required by the Consent Decree or this Statement of Work shall be submitted to EPA for review and approval in accordance with Section XI (EPA Approval of Plans and Other Submissions) of the Consent Decree. The Settling Defendant shall prepare design documents to conduct the RA as specified in the ROD/ESD. A summary of the major deliverables and a schedule for submittals are attached (Attachments 2 and 3).
- 3. The Settling Defendant shall furnish all necessary and appropriate personnel, materials, and services needed for, or incidental to, performing and completing the RD/RA.
- 4. The Project Manager for the Settling Defendant shall communicate at least weekly with the Remedial Project Manager (RPM), either in face-to-

face meetings, through conference calls, or through electronic mail. The Settling Defendant shall document all decisions that are made in meetings and conversations with EPA. The Settling Defendant shall forward this documentation to the RPM within two working days of the meeting or conversation.

5. The Settling Defendant shall prepare and send to the EPA Project Manager monthly status reports documenting the status of each task, beginning in the month following entry of the Consent Decree and ending with the month following issuance of the Certificate of Completion of Remedial Action.
6. As needed, the Settling Defendant shall attend project meetings, provide documentation of meeting results, and shall contact the RPM to report project status. The Settling Defendant shall participate in monthly construction meetings with EPA. Participants should also include Settling Defendant's prime contractor and EPA's oversight contractor.
7. EPA will provide oversight of Settling Defendant activities throughout the RD/RA. EPA's review and approval of deliverables is administrative in nature and allows the Settling Defendant to proceed to the next steps in implementing the work. EPA's approval does not imply any warranty of performance, nor does it imply that the remedy, when constructed, will meet Performance Standards, nor does it imply that the remedy will function properly and be accepted by EPA. Acceptance of plans, specifications, and design-required submittals (e.g., shop drawings, design details) by EPA does not relieve the Settling Defendant or their contractors of responsibility for the adequacy of the design or from their professional responsibilities.
8. The Settling Defendant shall maintain all technical and financial records for the RD/RA in accordance with Section XXV, Retention of Records, of the Consent Decree.
9. The Settling Defendant shall provide office space for the EPA Project Coordinator and EPA-authorized oversight officials at the site if the Settling Defendant or their contractor have office space at the site. If no office space is established at the site, the Settling Defendant shall provide office space for the EPA Project Coordinator and EPA-authorized Oversight officials in proximity to the Settling Defendant's field-operation office near the site. Minimum office requirements shall include an air-conditioned, heated, well-lighted, private office, one office desk with chair, one four-drawer file cabinet, a telephone with a private line, and a second phone line for computer internet access. In addition, Settling Defendant shall provide access to a facsimile transmission machine, a photocopier,

and sanitation facilities. The Settling Defendant shall also provide the field operation office with a refrigerator, a table to review full sized drawings, and other reasonable accessories needed to conduct oversight activities.

E. Remedial Design

1. Task 1 Project Planning and Support

The purpose of this task is to determine how the site-specific remedial action objectives and performance standards, as specified in the ROD/ESD will be met. The following activities shall be performed as part of the project planning task:

1.1 Supervising Contractor

The Settling Defendant shall designate a Supervising Contractor in accordance with Section VI, Paragraph 9 of the Consent Decree.

1.2 Attend Scoping Meeting (if required or requested)

The Settling Defendant shall contact the EPA RPM within 2 calendar days after receipt of the authorization to proceed, as described in Section VI, Paragraph 9, of the Consent Decree, to schedule the scoping meeting. The Settling Defendant shall attend a scoping meeting to be held at the USEPA Region 6 Office in Dallas, TX, before or concurrent with developing the Remedial Design Work Plan.

1.3 Conduct Site Visit (if required or requested)

The Settling Defendant shall conduct a one-day site visit during the project planning phase to develop a conceptual understanding of the site and the RD scope and requirements. Information gathered during the visit shall be used to better scope the project and to help determine the extent of additional data necessary to implement the RD. A Health and Safety Plan (HASP) is required for the site visit. The Settling Defendant shall prepare a report that documents all EPA, Settling Defendant, and site personnel present at the visit; all decisions made during the visit; any action items assigned, including person responsible and due date; any unusual occurrences during the visit; and any portions of the site that were not accessible to the Settling Defendant and the effect of this on the RD. This report shall be submitted to the EPA RPM within 10 calendar days of the site visit.

1.4 Evaluate Existing Data and Documents

The Settling Defendant shall obtain, copy (if necessary), and evaluate existing data and documents, including the Remedial Investigation/Feasibility Study (RI/FS), the ROD/ESD, and other data and documents as needed to prepare the remedial design. This information shall be used to determine if any additional data are needed for RD implementation. The documents available for review are listed in the Administrative Record Index for the site.

1.5 Develop Draft Work Plan

The Settling Defendant shall prepare and submit a RD Work Plan in accordance with Section VI, Paragraph 10 of the Consent Decree, and the appropriate USEPA guidance. The Settling Defendant shall submit one hard copy/one Adobe electronic copy of the Draft Work Plan to the RPM and three copies to the State of Louisiana (LDEQ). The Work Plan shall include a comprehensive description of the additional data collection and evaluation of activities to be performed, if any, and the plans and specifications to be prepared. A comprehensive design management schedule for completion of each major activity and submittal shall also be included. Specifically, the Work Plan shall include the following:

1.5.1 Develop Narrative

The RD Work Plan shall include a comprehensive description of project tasks, the procedures to accomplish them, project documentation, and project schedule. The Settling Defendant shall use their quality assurance/quality control (QA/QC) systems and procedures to assure that the work plan and other deliverables are of professional quality requiring only minor revisions.

1.5.2 Background

A background summary setting forth: (1) a brief description of the site including the geographic location and a description of the physiographic, hydrologic, geologic, demographic, ecological, cultural, and natural resource features of the site; (2) a brief synopsis of the history of the site including a summary of past disposal practices and a description of previous responses that have been conducted by local, State, Federal, or private parties at the site; and, (3) a summary of the existing data including physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the site.

1.5.3 Task Narrative

Identification of RD project elements including planning and activity reporting documentation, field sampling and analysis activities, and treatability study activities. Output for each task will be a detailed work breakdown of the RD and include: the Settling Defendant's technical and management approach to each task to be performed, including a detailed description of each task; the assumptions used; the identification of any technical uncertainties (with a proposal for the resolution of those uncertainties); the information needed for each task; any information to be produced during and at the conclusion of each task; and, a description of the work products that will be submitted to USEPA. The Settling Defendant shall identify any subcontractor(s) it plans to use to accomplish all or part of a task's objectives if known at the time. If the need for

additional subcontractors is determined during the implementation of the RD Work Plan, EPA will be notified prior to their use.

1.5.4 Schedule

A schedule with specific dates for completion of each required activity and submission of each deliverable required by the SOW shall be provided. This schedule shall also include information regarding timing, initiation, and completion of all critical path milestones for each activity and deliverable and the expected review time for USEPA.

1.6 Negotiate and Revise Draft Work Plan

If the Settling Defendant find that an ARAR or Performance Standard cannot be met, the Settling Defendant shall describe the issue and recommend technical solutions in a memo to the RPM. The Settling Defendant shall make revisions to the Work Plan as a result of EPA's comments and/or agreements. The final work plan shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 2: two electronic copies to EPA and three copies to LDEQ.

1.7 Site-Specific Plans

The Settling Defendant shall make revisions to the site-specific Plans as a result of EPA's comments and/or agreements. The final site-specific plans shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 2: two electronic copies to EPA and three copies to LDEQ.

1.7.1 Site Management Plan (SMP)

The Settling Defendant shall prepare a SMP that provides EPA with a written understanding of how access, security, contingency procedures, management responsibilities, and waste disposal are to be handled. Whenever possible, refer to the SMP developed for the RI/FS.

1.7.1.1 Pollution Control and Mitigation Plan (PCMP)

The Settling Defendant shall prepare a PCMP that outlines the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site.

1.7.1.2 Waste Management Plan (WMP)

The Settling Defendant shall prepare a WMP that outlines how wastes that are encountered during the RD will be managed and disposed. The Settling Defendant shall specify the procedures that will be followed when wastes are managed including onsite and offsite storage, treatment, and/or disposal.

1.7.1.2.1 Decontamination Plan
Plan that describes the equipment and methods that will be used for decontamination procedures.

1.7.1.2.2 Water Control Plan
Plan that addresses methods for collection, treatment, disposal or discharge of decontamination water, dust control water, and stormwater, and other surface water.

1.7.2 Health and Safety Plan (HASP)

The Settling Defendant shall prepare a site specific HASP that specifies employee training, protective equipment, medical surveillance requirements, standard operating procedures, and an emergency response plan in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120 1(1) and (1)(2). A task-specific HASP must also be prepared to address health and safety requirements for site visits. The emergency response plan describes how to handle emergencies at the site and minimize risks associated with a response. This response plan should be reviewed and rehearsed regularly, and a copy should be provided to local emergency response facilities. Whenever possible, refer to the HASP developed for the RI/FS.

1.7.3 Sampling and Analysis Plan

1.7.3.1 Quality Assurance Project Plan (QAPP)

The Settling Defendant shall prepare a QAPP in accordance with EPA QA/R-5 (latest draft or revision). The QAPP shall describe the project objectives and organization, functional activities, and quality assurance/quality control (QA/QC) protocols that shall be used to achieve the desired Data Quality Objectives (DQOs). The DQOs shall, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan.

1.7.3.2 Field Sampling Plan (FSP)

The Settling Defendant shall prepare a Field Sampling Plan (FSP) that defines the sampling and data collection methods that shall be used for the project. The FSP shall include sampling objectives; sample locations and frequency; sampling equipment and procedures; sample handling and analysis; and a breakdown of samples to be analyzed

through Contract Laboratory Program (CLP) and other sources, as well as the justification for those decisions. The FSP shall consider the use of all existing data and shall justify the need for additional data whenever existing data will meet the same objective. The FSP shall be written so that a field sampling team unfamiliar with the site would be able to gather the samples and field information required.

1.7.3.3 Data Management Plan

The Settling Defendant shall prepare a Data Management Plan that outlines the procedures for storing, handling, accessing, and securing data collected during the RD.

1.7.4 Contingency Plan

The Settling Defendant shall prepare a contingency plan that will provide contingency measures for potential spills and discharges from materials handling or transportation. It should describe methods, means, and facilities required to prevent contamination of soil, water, atmosphere, uncontaminated structures, equipment or material from the discharge of waste due to spills. The Settling Defendant shall provide for equipment and personnel to perform emergency measures required to contain a spill and to remove and properly dispose of any media that become contaminated due to spillage, and provide for equipment and personnel to perform decontamination measures that may be required to remove spillage from previously uncontaminated structures, equipment, or material.

2. Task 2 Community Relations

The EPA will conduct community relations activities throughout the RD and implementation of the RA. The Settling Defendant shall provide copies of final documents to the existing Rapides Parish Public Library information repository.

3. Task 3 Data Acquisition

Data acquisition entails collecting environmental samples and information required to support the RD, as needed. Data acquisition starts with EPA's approval of the FSP and ends with the demobilization of field personnel and equipment from the site.

The Settling Defendant shall perform, as needed to prepare the RD for the site, the following field activities or combination of activities for data acquisition in accordance with the EPA-approved FSP and QAPP. Before beginning field activities, consider specifying a kickoff meeting with all principal personnel to clarify objectives, communication channels, etc.

3.1 Mobilization and Demobilization

The Settling Defendant shall provide the necessary personnel, equipment, and materials for mobilization and demobilization to and from the site for the purpose of conducting the sampling program.

3.1.1 Identify Field Support Equipment, Supplies, and Facilities

3.1.2 Mobilization

3.1.3 Site Preparation

3.1.4 Installation of Utilities

3.1.5 Construction of Temporary Facilities

3.1.6 Demobilization

3.2 Field Investigation

The Settling Defendant shall conduct environmental sampling as needed to prepare the RD.

4. Task 4 Sample Analysis

The Settling Defendant shall arrange for the analysis of environmental samples collected during the previous task, as needed to prepare the RD. The sample analysis task begins with selection of the analytical laboratory and the completion of the field sampling program. This task ends with the Settling Defendant validating the analytical data received from the laboratory.

The Settling Defendant shall, as needed to prepare the RD, perform the following activities or combination of activities to analyze test results.

4.1 Screening-Type Laboratory Sample Analysis

The Settling Defendant shall perform as needed to prepare the RD. The samples collected should be analyzed for Organic and Inorganic constituents.

4.2 CLP-Type Laboratory Sample Analysis

The Settling Defendant shall perform as needed to prepare the RD. The samples collected should be analyzed for Organic and Inorganic constituents.

5. Task 5 Analytical Support and Data Validation

The Settling Defendant shall arrange for the validation of environmental samples collected during the previous task, as needed to prepare the RD. The sample validation task begins with the completion of the field sampling program and ends with the Settling Defendant validating the analytical data received from the laboratory. The Settling Defendant shall perform appropriate data validation to ensure that the data are accurate and defensible.

The Settling Defendant shall perform, as needed to prepare the RD, the following activities or combination of activities to validate test results.

5.1 Prepare and Ship Environmental Samples

The Settling Defendant shall collect, prepare and ship environmental samples in accordance with the FSP and QAPP.

5.2 Implement EPA-Approved Laboratory QA Program

5.3 Provide Sample Management (Chain of Custody, Sample Retention, and Data Storage)

The Settling Defendant shall ensure the proper management of samples and accurate chain-of-custody procedures for sample tracking, protective sample packing techniques, and proper sample-preservation techniques.

5.4 Coordinate with Appropriate Sample Management Personnel

5.5 Data Validation Support

The Settling Defendant shall ensure that proper data validation procedures, the process by which the quality of the data, the defensibility of the data, and the chain of custody, are verified.

6. Task 6 Data Evaluation

The Settling Defendant shall organize and evaluate existing data and data gathered during the previous tasks that will be used later in the RD effort. Data evaluation begins with the receipt of analytical data from the data acquisition task and ends with the submittal of the Data Evaluation Summary Report. Specifically, the Settling Defendant shall perform the following activities or combination of activities during the data evaluation effort:

6.1 Data Usability Evaluation and Field QA/QC

The Settling Defendant shall evaluate the useability of the data.

6.2 Data Reduction, Tabulation, and Evaluation

The Settling Defendant shall evaluate, interpret, and tabulate data in an appropriate presentation format for final data tables. The Settling Defendant shall design and set up an appropriate database for pertinent information collected that will be used during the RD.

6.3 Modeling,(if needed)

6.4 Develop Data Evaluation Report

The Settling Defendant shall evaluate and present results in a Data Evaluation Summary Report (to be included in the Final Design) and submit to the RPM for review and approval.

7. **Task 7 Treatability Study and Pilot Testing** (if required)

The purpose of the Treatability Study is to provide sizing and operations criteria that are used in design drawings and specifications and in the engineer's cost estimate to optimize the RD. The task begins with the preparation of a Treatability Study Work Plan that provides the technical specifics of the study and ends with the Settling Defendant's submittal of the Treatability Study Evaluation Report which is to be included in the Final Design package. In some instances, information on technology performance can be found in the current literature and should be reviewed before the Treatability Study is designed.

The three levels of treatability studies are laboratory screening, bench-scale testing, and pilot-scale testing. The laboratory screening is used to establish the validity of a technology to treat waste and is normally conducted during the FS. Bench-scale testing is used to identify the performance of the technology specific to a type of waste for an operable unit. Often bench-scale tests are conducted during the FS. Pilot-scale testing is used to provide quantitative performance, cost, and design information for remediation and is typically performed during RD (see the Fact Sheet, *Guide for Conducting Treatability Studies Under CERCLA*, November, 1993).

In accordance with the design management schedule established in the approved RD Work Plan, the Settling Defendant shall perform the following activities, as needed to prepare the RD. The Settling Defendant shall make revisions to the treatability study work plan as a result of EPA's comments and/or agreements. One CD and one hard copy of the final treatability study work plan shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 2.

7.1 Literature Search

The Settling Defendant shall conduct a literature search.

7.2 Develop Treatability Study Work Plan

The Settling Defendant shall prepare the Treatability Study Work plan and submit it to the RPM for review. The Treatability Study Work Plan shall describe the technology to be tested, test objectives, test equipment or systems, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety procedures, and residual waste management. The DQOs for the treatability study shall also be documented.

If testing is to be performed off-site, permitting requirements shall be addressed. A schedule for performing the treatability study shall be included with specific dates for each task and subtask, including EPA review periods.

The Treatability Study Work Plan shall be consistent with the schedule in the RD Work Plan. The Treatability Study Work Plan shall describe in detail the treatment process and how the proposed vendor or technology will meet the performance standards for the site. The Treatability Study Work Plan shall address how the Settling Defendant will meet all discharge or disposal requirements for any and all treated material, air, water, and expected effluents. Additionally, the Work Plan shall explain the proposed final treatment and disposal of all material generated by the proposed treatment system.

The Settling Defendant shall conduct the Treatability Studies, as necessary, to determine whether the remediation technology or vendor of the technology can achieve the performance standards. Treatability studies shall be conducted as described in the EPA-approved Final Treatability Study Work Plan. The following activities may be required during the performance of the treatability study.

7.3 Bench Test, Pilot-Scale Test, Field Test

The Settling Defendant shall conduct a bench test, pilot-scale test, and field test.

7.3.1 Procure Test Facility and Equipment

The Settling Defendant shall procure test facility and equipment, including the procurement procedures necessary to acquire the vendor, equipment, or facility to execute the tests.

7.3.2 Provide Vendor and Analytical Service

The Settling Defendant shall provide vendor and analytical services.

7.3.3 Test and Operate Equipment

The Settling Defendant shall test equipment to ensure operation, then start up and operate equipment.

7.3.4 Retrieve Sample for Testing

The Settling Defendant shall obtain samples for testing as specified in the Treatability Work Plan.

7.3.5 Perform Laboratory Analysis

The Settling Defendant shall establish a laboratory to facilitate fast-turnaround analysis of test samples.

7.3.6 Characterize and Dispose of Residuals

The Settling Defendant shall characterize and dispose of residuals.

7.4 Develop Treatability Study Report

The Settling Defendant shall prepare and submit the Treatability Study Evaluation Report that describes the performance of the technology. The study results shall clearly indicate the performance of the technology or vendor compared with the performance standards established for the site. The report shall also evaluate the treatment technology's effectiveness, implementability, cost, and final results compared with the predicted results. The report shall also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation. The Settling Defendant shall make revisions to the treatability study report as a result of EPA's comments and/or agreements. Two CDs of the final treatability study report shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 2.

8. Task 8 Final Remedial Design

At this stage, the Settling Defendant shall have field-verified the existing conditions of the site, as necessary. The Settling Defendant shall provide supporting data and documentation with the design documents defining the functional aspects of the project to prove that the completed project will be effective in meeting the remediation goals and applicable or relevant and appropriate requirements (ARARs). All final design documents shall be approved by a professional engineer registered in Louisiana. The EPA approval of the final design is required before initiating the RA unless specifically authorized by EPA. The Settling Defendant shall make revisions to the final design as a result of EPA's comments and/or agreements. The final design shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 2: two CD copies to EPA and three copies to LDEQ. The Final Design shall consist of the following:

8.1 Final Design

The Settling Defendant shall prepare a Final Design Report that will define in detail the technical parameters upon which the design will be based. Specifically, the Final Design Report shall include the design assumptions and parameters, including (1) waste characterization; (2) pretreating requirements; (3) volume and types of each medium requiring treatment; (4) treatment schemes (including all media and byproducts), rates, and required qualities of waste streams (i.e., input and output rates, influent and effluent qualities, potential air emissions, and so forth); (5) performance standards; (6) long-term performance monitoring and operations and maintenance (O&M) requirements; (7) compliance with all ARARs, pertinent codes, and standards; and, (8) technical factors of importance to the design and construction including use of currently accepted environmental control measures, constructability of the design, and use of currently acceptable construction practices and techniques. In addition, the Final Design Report shall include the following:

8.1.1 Final Project Delivery Strategy and Scheduling

The schedule shall include an evaluation of a phased approach to expedite the RA.

8.1.2 Final Construction Schedule

A RA schedule appropriate to the size and complexity of the project shall be included in the plans and specifications. It shall identify the timing for initiation and completion of all critical path tasks and specifically identify duration for completion of the project and major milestones.

8.1.3 Final Specifications Outline

The general specifications outline shall include all specification sections to be used. The plan shall include specifications for construction, installation, site preparation, and field work standards.

8.1.4 Final Design Drawings and Specifications

The drawings and schematics shall reflect organization and clarity. The final design shall include (1) an outline or listing of drawings and schematics; (2) facility representations including a process flow diagram and a final piping and instrumentation diagram; (3) a general arrangement diagram; (4) complete set of construction drawings and specifications (general specifications, drawings, and schematics); and (5) site drawings. Engineering drawings shall be submitted in full size and half size reproductions.

The final design plans and specifications must be consistent with the technical requirements of all ARARs. Any off-site disposal shall be in compliance with the policies stated in the Procedure for Planning and Implementing Off-Site Response Actions (*Federal Register*, Volume 50, Number 214, November 1985 pages 45933–45937) and other applicable guidance.

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the contractor shall coordinate and cross-check the specifications and drawings; and complete the proofing of the edited specifications and the cross-checking of all drawings and specifications.

8.1.5 Final Basis of Design

The Settling Defendant shall submit as part of the Final Design a detailed description of the evaluations conducted to select the design approach as part of the Basis of Design. This report shall include:

- 8.1.5.1 Summary and Detailed Justification of Assumptions
(1) calculations supporting the assumptions; (2) a draft process flow diagram; (3) a detailed evaluation of how all ARARs will be met; and (4) a plan for minimizing environmental and public impacts.
- 8.1.5.2 Recommended RA Contracting Strategy
The report shall address the management approach for procuring the RA contractor, including procurement methods, phasing alternatives, and contractor and equipment availability concerns.
- 8.1.5.3 Plan for Satisfying Permitting Requirements
The report shall incorporate EPA comments into an updated Permits Plan.
- 8.1.5.4 Identification of Easement and Access Requirements
The need for land acquisitions for access and easement requirements shall be identified and submitted as part of the Final Design.

8.1.6 Final Air Monitoring Plan

The Settling Defendant shall submit as part of the Final Design an air monitoring plan to meet the goal of the ROD/ESD for monitoring and controlling air emissions for the Ruston Foundry site. The plan shall be in compliance with all air monitoring requirements identified in the ROD/ESD. The plan shall identify any additional information and locations that may be needed to meet the air monitoring objectives for the site.

8.1.7 Final Surface Water Monitoring Plan

The Settling Defendant shall prepare a surface water monitoring plan to ensure that runoff control measures are being met if necessary. The plan shall identify surface water locations that will be sampled as well as the objectives that will be met.

8.1.8 Final Construction Quality Assurance Plan

The Settling Defendant shall submit as part of the Final Design a Construction Quality Assurance (CQA) Plan. The CQA Plan shall be prepared in accordance with "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA, October, 1986). At a minimum, the draft CQA Plan shall provide the following elements:

- 8.1.8.1 Personnel
Responsibility and authority of all organization and key personnel involved in the remediation action construction.

8.1.8.2 CQA Personnel Qualifications

The Settling Defendant shall establish the minimum qualifications of the CQA Officer and supporting inspection personnel.

8.1.8.3 Inspection Activities

The Settling Defendant shall establish the observations and tests that will be required to monitor the construction and/or installation of the components of the Remedial Action. The plan shall include the scope and frequency of each type of inspection to be conducted. Inspections shall be required to verify compliance with environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. Inspections shall also ensure compliance with all health and safety procedures.

8.1.8.4 Sampling Requirements

The Settling Defendant shall establish the requirements for sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection, and plans for correcting problems as addressed in the project specifications.

8.1.8.5 Documentation

The Settling Defendant shall describe the reporting requirements for CQA activities. This shall include such items as daily summary reports and inspection data sheets.

8.1.9 Final Data Evaluation Report (if necessary)

The Settling Defendant shall evaluate and present results in a Data Evaluation Summary Report.

8.2 Final Biddability, Constructability, Operability Review

The Settling Defendant shall perform and submit a report describing the results of the following design reviews:

8.2.1 Constructability Review

The Settling Defendant shall review and provide written comments for the Constructability Review. The constructability review shall be conducted to evaluate the suitability of the proposed project and its components in relation to the project size.

8.2.2 Biddability Review

The Settling Defendant shall review and provide written comments for the initial biddability review.

8.2.3 Operability Review

The Settling Defendant shall review and provide written comments for the Initial Operability Review. The operability review shall assure that the completed project will conform to applicable performance and operations requirements.

8.2.4 Environmental Review

The Settling Defendant shall review and provide written comments for the initial Environmental Review.

8.2.5 Claims Prevention Screening

The Settling Defendant shall review and provide written comments for the Claims Prevention Screening. The claims prevention review is to be conducted to eliminate conflicts, inconsistencies, ambiguities, errors, omissions, or other identifiable problems in the plans, specifications, and contract documents that are subject to change orders and contractor claims.

8.3 Describe Variances with the ROD/ESD

If the Settling Defendant finds that the Performance Standards in the ROD/ESD or ARARs cannot be met, the Settling Defendant shall describe the issue and recommend technical solutions in a memorandum to the RPM.

8.4 Land Acquisition and Easement Requirements

The Settling Defendant shall identify the need for land acquisition for access and easement requirements and submit as part of the Basis of Design. The Settling Defendant shall also identify access needs and locations.

8.5 Respond to Design Review Comments

The Settling Defendant shall consolidate and respond to design review comments. A written response to each comment shall be provided should the Settling Defendant request further discussion. The response shall indicate whether the Settling Defendant has decided to implement a design change as a result of the comment, and how the change will impact the selected remedy, RD/RA costs, and/or schedule. A summary of the responses to comments shall be submitted to the RPM prior to completion of the Final Design. After EPA review and comment, the Final Design shall be submitted.

8.6 Participate in Final Design Review or Briefing

The Settling Defendant shall participate in design review meetings to be held at Region 6 offices (if required or requested).

The Settling Defendant shall implement QC procedures to ensure the quality of all reports and submittals to EPA. These procedures shall include, but are not limited to, internal technical and editorial review; the independent verification of all calculations used in the design; and the documentation of all reviews, the problems identified, and corrective actions taken.

F. Remedial Action

1. Task 1 Project Planning and Support

The purpose of this task is to plan for the execution and overall management of the remedial action for the site. The technical and managerial activities required to implement the RA are developed during the planning phase and are detailed in the RA Work Plan. The following activities shall be performed as part of the project planning and support task:

1.1 Attend Scoping Meeting (if required or requested)

Before or concurrent with developing the RA Work Plan, the Settling Defendant shall attend a scoping meeting to be held at the EPA Regional Office or at the site in conjunction with the Site Visit.

1.2 Conduct Site Visit (if required or requested)

The Settling Defendant shall conduct a site visit with the EPA RPM and designer's representative (if appropriate) during the RA planning phase to assist in developing an understanding of the site and any construction logistics. Information gathered during the visit shall be used to better scope the project and to implement the RA. A Health and Safety Plan (HASP) is required for the site visit. The Settling Defendant shall prepare a report that documents the site visit and any required action items or decisions. This report shall be submitted to the EPA RPM within 10 calendar days of the site visit.

1.3 Evaluate Existing Information (if necessary)

The Settling Defendant shall obtain, copy (if necessary), and evaluate existing data and documents, including the final Design Package, the RD Work Plan, the ROD/ESD, Remedial Investigation/Feasibility Study (RI/FS), Supplemental Focused Feasibility Study, and other data and documents as needed to implement the RA. This information shall be used to determine if any additional data are needed for implementation of the RA.

1.4 Develop Draft RA Work Plan

The Settling Defendant shall develop a work plan that includes a detailed description of the technical approach and overall management strategy for the remediation, operations and maintenance, performance monitoring, and construction activities in accordance with the final design, ROD/ESD, and Section VI, Paragraph 11 of the Consent Decree. The necessary procedures,

inspections, deliverables, and schedules shall be specified. A comprehensive construction management schedule for completion of each major activity and submittal shall also be included. In addition, the work plan shall include information related to the execution of contracts for construction and the identification of and satisfactory compliance with permitting requirements.

1.4.1 Develop Narrative

The RA Work Plan shall include a comprehensive description of project tasks, the procedures to accomplish them, project documentation, and project schedule. The Settling Defendant shall use their quality assurance/quality control (QA/QC) systems and procedures to assure that the work plan and other deliverables are of professional quality requiring only minor revisions.

1.4.2 Identify the Problems

A statement of the problem(s) and potential problem(s) posed by the site and how the objectives of the completed RA will address the problem(s).

1.4.3 Task Narratives

The Settling Defendant's technical approach to each task to be performed, including a detailed description of each task; the assumptions used; the information needed for each task; any information to be produced during and at the conclusion of each task; and a description of the work products that will be submitted to EPA.

1.4.4 Schedule

A schedule for specific dates for completion of each required activity and submission of each deliverable required by this SOW. (See Attachment 3). The detailed Remedial Action Schedule shall also include information about timing, initiation, and completion of all critical path milestones for each activity and deliverable and the expected review time for EPA.

1.4.5 Personnel

An organizational structure which outlines the roles, relationships, and responsibilities and authority of all organizations and key personnel involved in the RA. A description of key project personnel's qualifications (project manager, resident engineer, quality assurance official, etc.) shall be provided.

1.5 Negotiate and Revise Draft Work Plan

The Settling Defendant shall make revisions to the RA work plan as a result of EPA's comments and/or agreements. The Final RA work plan shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 3: two CD copies to EPA and three copies to LDEQ.

1.6 Project Management

1.6.1 Maintain Schedule Control System

The Settling Defendant shall develop and maintain a system to monitor and control the schedule of the RA. The Settling Defendant shall specify the process to continuously update the information in the system as a result of engineering network analyses and changing field conditions. The system shall have the capability to compare technical progress and predict completion dates.

1.6.2 Coordinate with Local Emergency Response Teams

The Settling Defendant shall coordinate with local emergency responders to ensure the proper implementation of the HASP and specifically the Emergency Response Plan. The Settling Defendant shall review and complete the emergency responder agreement, if necessary, conduct a kickoff meeting at the site with all local emergency responders, and notify the responders of any changes to the Emergency Response Plan throughout the RA.

2. Task 2 Community Relations

The EPA will conduct community relations activities throughout the RD and implementation of the RA. The Settling Defendant shall provide copies of final documents to the existing Rapides Parish Public Library information repository.

3. Task 3 Update Site Specific Plans

The purpose of this task is to review the existing site-specific plans that were prepared during RD, and update, as necessary, to implement the RA. Plans not prepared during the RD, but needed to implement the RA, shall be prepared by the Settling Defendant under this task. The final site-specific plans shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 3: two CD copies to EPA and three copies to LDEQ. This task begins with approval of the RA Work Plan and will occur throughout the duration of the work assignment. The Settling Defendant have the overall responsibility to prepare, update, and/or maintain the necessary site-specific plans for implementation of the RA. Since the Settling Defendant's subcontractors will prepare their own RA plans, the Settling Defendant will incorporate the plans and procedures received from any subcontractors into the overall site plans. Construction plans and procedures are living documents and the contractor shall update the appropriate plans, as necessary, throughout the RA.

3.1 Update Site Management Plan

The Settling Defendant shall update the Site Management Plan (SMP) that was prepared during RD. This plan provides EPA with a written understanding of how access, security, health and safety, contingency procedures, management

responsibilities, and waste disposal are to be handled during construction as well as the identification of and satisfactory compliance with permitting requirements. The Settling Defendant shall update the plan, as necessary, to incorporate any subcontractors' plans.

3.1.1 Pollution Control and Mitigation Plan (PCMP)

The Settling Defendant shall update the PCMP that outlines the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site. Any plans and procedures prepared during the RD should be referenced or adapted whenever possible (i.e., sediment and erosion control plan and air monitoring plan).

3.1.2 Waste Management Plan (WMP)

The Settling Defendant shall update the WMP that outlines how wastes that are encountered during the RA will be managed and disposed. The Settling Defendant shall specify the procedures that will be followed when wastes are managed including onsite and offsite storage, treatment, and/or disposal.

3.1.2.1 Decontamination Plan

Plan that describes the equipment and methods that will be used for decontamination procedures.

3.1.2.2 Water Control Plan

Plan that addresses methods for collection, treatment, disposal or discharge of decontamination water, dust control water, and stormwater, and other surface water.

3.2 Update Health and Safety Plan

The Settling Defendant shall update the Health and Safety Plan (HASP) for Remedial Action activities to be prepared in conformance with applicable Occupational Safety and Health Administration (OSHA) and EPA requirements, including 29 C.F.R. 1910. EPA shall not approve or disapprove the Health and Safety Plan, but shall review it to assure its existence and shall require compliance by Settling Defendant with its terms as part of the Consent Decree.

The Settling Defendant shall update the site specific Health and Safety Plan (HASP) that specifies employee training, protective equipment, medical surveillance requirements, standard operating procedures and a contingency plan in accordance with 29 CFR 1910.120 (l)(1) and (l)(2). The plan shall address employee training, protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120 1(1) and (1)(2). Whenever possible, refer to the HASP developed for the RD when

preparing the HASP for the RA. A task-specific HASP must also be prepared to address health and safety requirements for site visits.

3.3 Update Sampling and Analysis Plan (SAP)

The Settling Defendant shall update the sampling and analysis plan to reflect the specific objectives of any data acquisition conducted during construction. The SAP will outline the data collection and quality assurance requirements of any sampling an analysis conducted by the Settling Defendant.

3.3.1 Quality Assurance Project Plan

The Settling Defendant shall update the QAPP in accordance with EPA QA/R-5 (latest draft or revision). The QAPP shall describe the project objectives and organization, functional activities, and quality assurance/quality control (QA/QC) protocols that shall be used to achieve the desired Data Quality Objectives (DQOs). The DQOs shall, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan. The QAPP developed for the RD and/or RI/FS should be referenced or adapted whenever possible when preparing the QAPP for the RA.

3.3.2 Field Sampling Plan (FSP)

The Settling Defendant shall update the FSP that defines the sampling and data collection methods that shall be used for the project to measure progress toward meeting remedial objectives, remediation goals, and Performance Standards established in the ROD/ESD. The FSP shall include sampling objectives; sample locations and frequency; sampling equipment and procedures; sample handling and analysis; and a breakdown of samples to be analyzed through Contract Laboratory Program (CLP) and other sources, as well as the justification for those decisions. The FSP shall be written so that a field sampling team unfamiliar with the site would be able to gather the samples and field information required. The FSP developed for the RD and/or RI/FS should be referenced or adapted whenever possible when preparing the FSP for the RA.

3.3.3 Data Management Plan

The Settling Defendant shall update the Data Management Plan that outlines the procedures for storing, handling, accessing, and securing data collected during the RA.

3.4 Update Air Monitoring Plan

The Settling Defendant shall update the Air Monitoring Plan to provide a comprehensive outline of the air monitoring procedures and protocols for the RA, including i) baseline air quality monitoring; ii) onsite/offsite air monitoring

(including fugitive dust and personal monitoring); iii) sample collection methodology; iv) laboratory analytical protocol; and, v) air monitoring trigger levels and corrective actions.

3.4.1 Dust Control Plan

Plan that addresses dust control protection procedures and protocol for minimizing fugitive dust emissions during the RA.

3.5 Update Construction Quality Assurance (CQA) Plan

The Settling Defendant shall review and update the final Construction Quality Assurance (CQA) Plan as submitted as part of the final design documents. The CQA Plan shall outline the necessary steps to inspect and sample construction materials (i.e., membranes, concrete) and to ensure the overall quality of the constructed project. The CQA Plan shall include the following elements:

3.5.1 Personnel

Responsibility and authority of all organization and key personnel involved in the remedial action construction.

3.5.2 CQA Personnel Qualifications

The Settling Defendant shall establish the minimum qualifications of the CQA Officer and supporting inspection personnel.

3.5.3 Inspection Activities

The Settling Defendant shall establish the observations and tests that will be required to monitor the construction and/or installation of the components of the RA(s). The plan shall include the scope and frequency of each type of inspection to be conducted. Inspections shall be required to verify compliance with environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. Inspections shall also ensure compliance with all health and safety procedures.

3.5.4 Sampling requirements

The Settling Defendant shall establish the requirements for sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection, and plans for correcting problems as addressed in the project specifications.

3.5.5 Documentation

The Settling Defendant shall describe the reporting requirements for CQA activities. This shall include such items as daily summary reports and inspection data sheets.

3.6 Update Contingency Plan

The Settling Defendant shall update this plan to provide contingency measures for potential spills and discharges from materials handling or transportation. It should describe methods, means, and facilities required to prevent contamination of soil, water, atmosphere, uncontaminated structures, equipment or material from the discharge of waste due to spills. The Settling Defendant shall provide for equipment and personnel to perform emergency measures required to contain a spill and to remove and properly dispose of any media that become contaminated due to spillage, and provide for equipment and personnel to perform decontamination measures that may be required to remove spillage from previously uncontaminated structures, equipment, or material.

4. **Task 4 Construction**

This task includes the field supervision and documentation of the Settling Defendant' RA constructor's work as it proceeds onsite. The task begins with the Settling Defendant's constructor's mobilization to the site and ends with the final inspection. The Settling Defendant will provide the necessary personnel to observe and monitor the Settling Defendant's constructor's daily activities, procedures, and inspections.

4.1 Attend Periodic Meetings

The Settling Defendant and their contractor shall attend any meetings, at the request of the EPA, to provide clarification on contract documents, specifications, construction progress, and field schedules.

4.2 Provide Field Presence and Oversight

The Settling Defendant shall provide a Resident Engineer to observe, monitor, and document the daily field activities of the Settling Defendant' constructor.

4.3 Maintain Field Logs and Daily Diaries

The Settling Defendant's Resident Engineer shall maintain field logs and daily dairies documenting activities occurring in the field during construction.

4.4 Provide Engineering Support

The Settling Defendant shall recommend actions on health and safety considerations if necessary, maintain records to support the resolution of any claims filed by the constructor, shall provide support for construction schedule changes, monitor, update and report construction progress, review and update the schedule necessary during the construction, prepare inspection reports during construction, and review construction drawings during construction.

4.5 Perform Field Testing

The Settling Defendant shall provide the necessary personnel and equipment to collect any confirmatory samples, perform any necessary field testing, and conduct inspections of work.

4.6 Monitor Quality Control Procedures

The Settling Defendant shall monitor any quality control procedures.

5. **Task 5 Cleanup Validation**

The purpose of this task is for the Settling Defendant to perform confirmatory sampling during construction and to verify that final cleanup levels or standards, as specified in the ROD/ESD, have been achieved. This task may also include regular confirmatory testing of materials used during construction to determine if they are consistent with the requirements of the construction contract documents (i.e., soils testing, materials testing). This task may begin during the early stages of construction, continue throughout construction, and end with the final inspection to ensure cleanup levels have been met.

5.1 Mobilization/Demobilization

The Settling Defendant shall acquire all necessary equipment, supplies, and personnel to set up onsite operations for confirmatory sampling and analyses and dismantle and pack up all equipment associated with the confirmatory sampling activities.

5.2 Field Investigation

5.2.1 Soil/Sediment

Conduct soils/sediments confirmatory sampling.

5.2.2 Air

Conduct Air Samples throughout the remedial action.

5.2.3 Ground Water Wells

The Settling Defendant shall mobilize the necessary personnel and equipment for well system plugging and abandonment for the onsite well. Also, Settling Defendant shall collect samples from the monitoring wells and measure the groundwater elevation throughout the RA.

5.2.4 Surface Water

The Settling Defendant shall collect surface water samples during remedial action, if necessary.

5.2.5 Underground Storage Tank

The Settling Defendant shall conduct a waste investigation into the contents of the storage tank and dispose of derived waste. The contractor shall dispose of investigative derived waste.

5.2.6 Investigation-derived Wastes

The Settling Defendant shall characterize and dispose of investigation-derived wastes in accordance with local, State, and Federal regulations as specified in the FSP and the Waste Management Plan (For more information, refer to the Fact Sheet entitled, Guide to Management of Investigation-Derived Wastes, 9345.3-03FS [January 1992]).

5.3 Sample Analysis

The Settling Defendant shall arrange for and conduct the appropriate combination of CLP analytical tests for any materials and/or confirmatory samples taken at the site:

5.3.1 Analyze Air Samples

5.3.2 Analyze Ground Water Samples

5.3.3 Analyze Surface Water Samples

5.3.4 Analyze Soil and Sediment Samples

5.3.5 Analyze Waste (Liquid) Samples

5.3.5 Analyze Waste (Solid) Samples

5.4 Analytical Support and Data Validation

The Settling Defendant shall ensure the proper management of samples in the field and arrange for shipment to the designated laboratory. Accurate chain-of-custody procedures for sample tracking, protective sample packing techniques, and proper sample-preservation techniques will be used.

5.5 Data Evaluation Report

The Settling Defendant shall evaluate, interpret, and tabulate data in an appropriate presentation format for final data tables. The Settling Defendant shall design and set up an appropriate database for pertinent information collected that will be used to validate the RA. These tables will include soil/sediment data, air data, ground water data, surface water data, and waste data. Evaluate and present the sampling and analytical results in a summary report and submit to the RPM for review. The report will assess the progress of the RA based on these results and identify any actions required. Information developed in support of the Data Evaluation Report will be included in the Final Remedial Action Report.

6. Task 6 Project Completion and Close Out

The purpose of the project completion and close-out activities is for the RA Settling Defendant to conduct the necessary inspections to verify completed work and prepare a Remedial Action Report.

6.1 Pre-final/Final Inspections

6.1.1 Make pre-final inspection

The Settling Defendant shall conduct the pre-final inspection with the constructor, EPA, LDEQ, and EPA's oversight contractor and develop a punch list of deficiencies. The Settling Defendant shall prepare and submit a prefinal inspection report which includes the list of deficiencies, completion dates for outstanding items, and the date for a final inspection.

6.1.2 Make Final Inspection

The Settling Defendant shall conduct the final inspection with the constructor, EPA, LDEQ, and EPA's oversight contractor and determine if all terms of the contract have been satisfied.

6.1.3 Final Punch List

6.1.3.1 As-built resolution/certification

6.1.3.2 Trial Period Oversight

6.2 Remedial Action Report

6.2.1 Prepare draft Remedial Action Report

The Settling Defendant shall prepare and submit to the RPM the draft Remedial Action Report, in accordance with the fact sheet entitled, Remedial Action Report, Documentation for Operable Unit Completion, Publication 9355.0-39FS, June 1992. The report shall summarize RA events, performance standards and construction quality control, construction activities, final inspection, certification that the remedy is operational and functional, and O&M.

6.2.2 Negotiate and Revise Remedial Action Report

The Settling Defendant shall make revisions to the RA Report as a result of EPA's comments and/or agreements. The Final RA Report shall be submitted within 15 days after receipt of EPA comments and in accordance with the schedule in Attachment 3: two CD copies to EPA and three copies to LDEQ.

6.2.3 Pre-Certification Inspection

The EPA RPM, designated EPA oversight officials, and the Settling Defendant, shall conduct a pre-certification inspection. The purpose of the inspection is to determine whether all aspects of the plans and specifications have been implemented at the site, and whether the remedy is operational, and has met or is capable of meeting all ARARs and Performance Standards identified in the ROD/ESD. EPA may require repeated pre-certification inspections in order for EPA to reinspect Work which was not completed in accordance with the Consent Decree or this Statement of Work, as determined by EPA during a previous inspection.

6.2.4 Certificate of Completion

Procedures for securing a Certification of Completion are contained in Section XIV of the Consent Decree (Certification of Completion).

Attachment 1

Regulations and Guidance Documents

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RD/RA process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures September 89, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund — A Handbook, U.S. EPA, Office of Emergency and Remedial Response, EPA 540-K-01-003, April 2002.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. The Data Quality Objectives Process for Superfund: Interim Final Guidance, U.S. EPA, EPA/540/R-93/071, September 1993.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, Prepublication version.

17. Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
26. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
27. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
28. Procedures for Completion and Deletion of NPL Sites, U.S. EPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.
29. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
30. *Remedial Design/Remedial Action (RD/RA) Handbook*, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER), 9355.0-04B, EPA 540/R-95/059, June 1995.
31. Revision of Policy Regarding Superfund Project Assignments, OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
32. Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.
33. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
34. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.

35. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
36. Comprehensive 5-Year Review Guidance, OSWER Directive No. 9355.7-03B-P, June 2001.
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.
38. Superfund Remedial Design and Remedial Action Guidance, U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. U.S. EPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, U.S. EPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, U.S. EPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.
46. Presumptive Remedies: Policy and Procedures, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9355.0-47FS, EPA 540-F-93-047, PB 93-963345, September, 1993.
47. Presumptive Remedies for Metals-in-Soil Sites, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9355.0-72FS, EPA 540-F-98-054, September 1999.
48. Close Out Procedures for NPL sites, U.S. EPA, Office of Solid Waste and Emergency Response, Directive 9320.2-09A-P, EPA 540-R-98-016, PB 98-963223, January, 2000.
49. Guide to Documenting Cost and Performance for Remediation Projects, EPA-542-B-95-002, March 1995.
50. Guidance for the Data Quality Objectives Process; EPA QA/G-4, EPA-600-R-96-055, August 2000.

Attachment 2: Summary of Major Submittals for the Remedial Design at Ruston Foundry Superfund Site

| TASK | DELIVERABLE | NO. OF COPIES | DUE DATE (calendar days) | Estimated EPA Review Time |
|-------------|---------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| D4 | conversation/meeting notes | 3 | 2 days after meeting or conversation | 2 days after receipt |
| D4 | monthly progress reports | 3 | monthly beginning after the entering of the CD and ending the month following the certification of completion of remedial action | 5 days after receipt |
| E1.3 | Site Visit Trip Report | 3 | 10 days after site visit | 5 days after receipt |
| E1.5 | RD Work Plan-draft | 3 | 30 days after Effective Date of the CD | 30 days after receipt |
| E1.6 | RD Work Plan-final | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| E1.7.1 | SMP | 3 | 30 days after Effective Date of the CD—included as part of the RD work plan | 30 days after receipt |
| E1.7.1.1 | Pollution Control and Mitigation Plan | NA | Included with SMP | NA |
| E1.7.1.2 | Waste Management Plan | NA | Included with SMP | NA |
| E1.7.1 | SMP-final | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| E1.7.2 | Health and Safety Plan (HASP) | 3 | 30 days after Effective Date of the CD—included as part of the RD work plan | 30 days after receipt |
| E1.7.2 | Revised HASP | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| E1.7.3 | SAP-draft | 3 | 30 days after Effective Date of the CD—included as part of the RD work plan | 30 days after receipt |
| E1.7.3.1 | Quality Assurance Project Plan | NA | Included with the SAP | NA |

| | | | | |
|----------|--------------------------------------------|----|-----------------------------------------------------------------------------|-----------------------|
| E1.7.3.2 | Field Sampling Plan | NA | Included with the SAP | NA |
| E1.7.3.3 | Data Management Plan | NA | Included with the SAP | NA |
| E1.7.3 | SAP-final | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| E1.7.4 | Contingency Plan-draft | 3 | 30 days after Effective Date of the CD—included as part of the RD work plan | 30 days after receipt |
| E1.7.4 | Contingency Plan-final | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| E7.2 | Treatability Study Work Plan-draft | 3 | 30 days after Effective Date of the CD—included as part of the RD work plan | 30 days after receipt |
| E7.2 | Revised Treatability Study Work Plan | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| E7.4 | Treatability Study Evaluation Report-draft | 3 | 30 days after completion of Treatability Study | 15 days after receipt |
| E7.4 | Treatability Study Evaluation Report-final | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| E8.1 | Final Design † | 3 | 30 days after Effective Date of the CD—included with of the RD work plan | 30 days after receipt |
| E8.5 | Response to Final Design Review Comments | 3 | 15 days after either the receipt of comments or the design review meeting | 7 days after receipt |

† **Final Design Plans Submittal Items:**

- E8.1.1 Final Project Delivery Strategy and Scheduling
- E8.1.2 Final Construction Schedule
- E8.1.3 Final Specifications Outline
- E8.1.4 Final Drawings and Schematics
- E8.1.5 Final Basis of Design
- E8.1.6 Final Air Monitoring Report
- E8.1.7 Final Surface Water Monitoring Report
- E8.1.8 Final Construction Quality Assurance Plan
- E8.1.9 Final Data Evaluation Report
- E8.2 Final Biddability, Operability, and Constructability Review
- E8.3 Variances with the ROD/ESD
- E8.4 Land Aquisition and Easement Requirements

See Attachment 1 for list of references.

Attachment 3: Summary of Major Submittals for the Remedial Action at Ruston Foundry Superfund Site

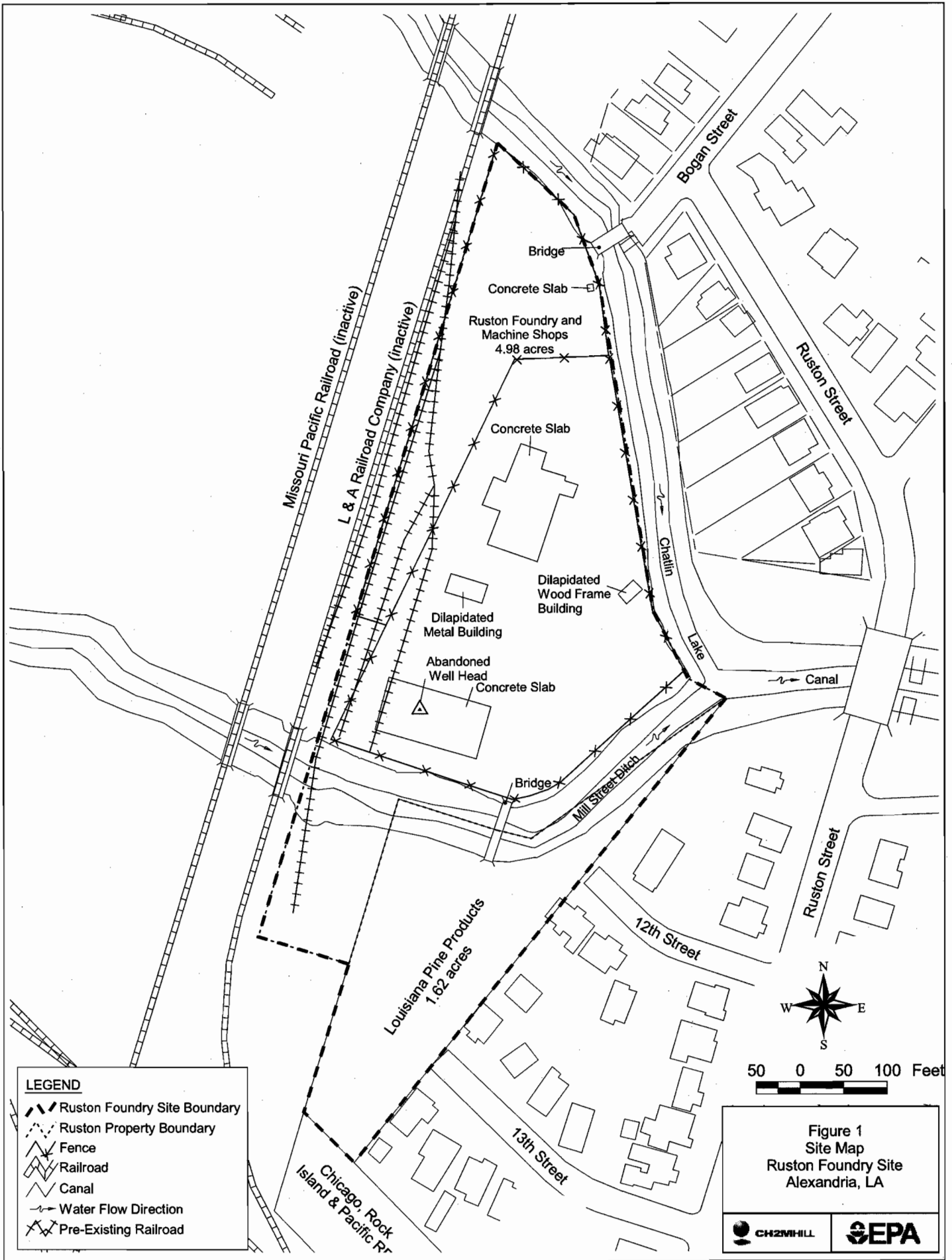
| TASK | DELIVERABLE | NO. OF COPIES | DUE DATE (calendar days) | Estimated EPA Review Time |
|-------------|-----------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| D4 | conversation/meeting notes | 3 | 2 days after meeting or conversation | 2 days after receipt |
| D4 | monthly progress reports | 3 | monthly beginning after the Effective Date of the CD and ending the month following the certification of completion of remedial action | 5 days after receipt |
| F1.2 | Site Visit Trip Report | 3 | 10 days after site visit | 5 days after receipt |
| F1.4 | RA Work Plan-draft | 3 | 30 days after Effective Date of the CD-included with the RD work plan | 15 days after receipt |
| F1.5 | RA Work Plan-final | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| F3.1 | SMP-updated draft for RA, if required | 3 | 15 days after approval of Final RA work plan | 15 days after receipt |
| F3.1.1 | Pollution Control and Mitigation Plan | NA | Included with SMP | NA |
| F3.1.2 | Waste Management Plan | NA | Included with SMP | NA |
| F3.1 | SMP-final for RA, if required | 3 | 15 days after receipt of EPA comments | 7 days after receipt |
| F3.2 | Health and Safety Plan (HASP)-updated draft for RA, if required | 3 | 15 days after approval of Final RA work plan | 15 days after receipt |
| F3.2 | HASP-Final for RA | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| F3.3 | SAP-updated draft for RA, if required | 3 | 15 days after approval of Final RA work plan | 15 days after receipt |
| F3.3.1 | Quality Assurance Project Plan | NA | Included with the SAP | NA |
| F3.3.2 | Field Sampling Plan | NA | Included with the SAP | NA |
| F3.3.3 | Data Management Plan | NA | Included with the SAP | NA |
| F3.3 | SAP-final for RA, if required | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |

| | | | | |
|--------|-----------------------------------------------------------------------|---|-------------------------------------------------------------------|-------------------------------------|
| F3.4 | Air Sampling Plan-updated draft for RA, if required | 3 | 15 days after approval of Final RD-included with the RA work plan | 15 days after receipt |
| F3.4 | Air Sampling Plan-Final for RA, if required | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| F3.5 | Construction Quality Assurance Plan-updated draft for RA, if required | 3 | 15 days after approval of Final RA work plan | 15 days after receipt |
| F3.5 | Construction Quality Assurance Plan-Final for RA, if required | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| F3.6 | Contingency Plan-updated draft for RA, if required | 3 | 15 days after approval of Final RA work plan | 15 days after receipt |
| F3.6 | Contingency Plan-final for RA, if required | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| F5.5 | Data Evaluation Report-draft | 3 | 15 days after receipt of analytical results from laboratory | 15 days after receipt |
| F5.5 | Data Evaluation Report-final | 3 | 7 days after receipt of EPA comments | 7 days after receipt |
| F6.1.1 | Pre-final Inspection Report | 3 | 15 days after completion of the Pre-final Inspection | 7 days after receipt |
| F6.1.2 | Final Inspection Report | 3 | 15 days after completion of punchlist items and Final Inspection | 7 days after receipt |
| F6.2 | RA Report-draft | 3 | 30 days after completion of the Final Inspection | 15 days after receipt |
| F6.2.3 | RA Report-final | 3 | 15 days after receipt of EPA Comments | 7 days after receipt |
| F6.2.5 | Certification of Completion | | | 15 days after approval of RA Report |

APPENDIX D

To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)

Map of the Ruston Foundry Superfund Site in Alexandria,
Rapides Parish, Louisiana



APPENDIX E

To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)

Form of Notice of the Location and Types of Hazardous
Substances on the Ruston Foundry Superfund Site
Referred to in Consent Decree Paragraph 25(b)

CONVEYANCE NOTIFICATION

The Louisiana Department of Environmental Quality (LDEQ) hereby notifies the public that the following described Area of Investigation (AOI), Louisiana Department of Environmental Quality's Agency Interest No. 12443, was closed with contaminant levels present that are acceptable for industrial/commercial use of the property as described in LDEQ's Risk Evaluation/Corrective Action Program (RECAP), October 20, 2003, Section 2.9. In accordance with LAC 33:I, Chapter 13, if land use changes from industrial to non-industrial, the responsible party shall notify the LDEQ within 30 days and the Site shall be reevaluated to determine if conditions are appropriate for the proposed land use.

PLEASE TAKE NOTICE THAT: Pursuant to the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq.*; the National Oil and Hazardous Substances Contingency Plan (NCP), 40 C.F.R. Part 300; the Louisiana Environmental Quality Act (LEQA), La. Rev. State. Ann. Title 30, Subtitle II, Chapters 10 and 12; and the Record of Decision dated June 24, 2002 as amended by the Explanation of Significant Differences dated September 28, 2004 for the Ruston Foundry Superfund Site, LDEQ AI 12443, EPA ID No. LAD985185107, Site ID No. 0604348. (available at the Louisiana Department of Environment Quality file room, 602 N. Fifth Street, First Floor, Baton Rouge, LA 70802) LDEQ hereby notifies the public that:

- The property described in Exhibit 1, attached hereto, (hereinafter referred to as "the Property") is the subject of a response action under CERCLA. The general location of the Property is shown on Exhibit 2.
- The property is subject to an agreement, enforceable by the Settling Defendant and the United States, to refrain from using the Site (in whole or in part), or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures performed pursuant to the Consent Decree.
- The property has been the subject of a CERCLA response;
- Any disturbing or removing of soil may pose a threat to human health or the environment, and may subject the property owner and the party causing the disturbance to liability under CERCLA or other laws;
- Development of the Property shall be restricted to industrial, commercial, and/or office space;
- No residence for human habitation or any other purpose necessitating around-the-clock residence by humans shall be permitted on the Property;
- No hospitals shall be permitted on the Property;

- No schools for persons under twenty-one (21) years of age shall be permitted on the Property;
- No day-care centers for children or day-care centers for senior citizens shall be permitted on the Property unless a risk assessment is made respecting the particular day-care center to be developed and such risk assessment is done in accordance with then current USEPA risk assessment guidance and is accepted by Covenantor and Covenantees as adequately showing no unacceptable level of risk; and
- No cultivation of plants or crops for human or animal consumption.

In the event that the ROD is amended to modify the institutional controls, the institutional controls from the amended ROD shall replace those set forth in this instrument. Nothing in this instrument gives the Settling Defendants any rights to seek amendment of the ROD that they do not otherwise have.

Additional information on site conditions may be obtained through the Louisiana Department of Environmental Quality and/or the United States Environmental Protection Agency (see above description and reference numbers). The information contained herein places prospective purchasers on notice of conditions that may be present on the Property. This Conveyance Notice does not relieve a prospective purchaser from undertaking its own review and investigation of conditions on the Property.

EXHIBIT 1

Legal Description

The Rapides Parish Tax Assessors Office provided the following legal descriptions of the site property.

A strip or parcel of land, 2.247 acres, trapezoid in shape, 108 feet wide and having a mean length of 906.45 feet; same being a portion of a vendor's right-of-way and station grounds situated on Sections 6 and 7, Township 4 North, Range 1 West, Alexandria, Rapides Parish, Louisiana.

A certain piece, parcel or tract of land, roughly triangular in shape compromising of 2.4 acres; fronting the Louisiana & Arkansas Railway property adjacent to the Rock Island Addition and situated on Sections 6 and 7, Township 4 North, Range 1 West, Alexandria, Rapides Parish, Louisiana.

APPENDIX F

To Consent Decree in
U.S. v. The KCSR Co. (W.D. La.)

Form of the Irrevocable Letter of Credit Referred to in
Consent Decree Paragraph 45

APPENDIX F

[Letterhead of Issuing Bank]

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER: [_____]

ISSUANCE DATE: [_____]

MAXIMUM AMOUNT: U.S.\$3,500,000 (Three Million Five-Hundred Thousand Dollars)

BENEFICIARY:

U.S. Environmental Protection Agency
c/o Samuel Coleman, P.E.
Director, Superfund Division, EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

APPLICANT:

The Kansas City Southern Railway
Company

P.O. Box 219335
Kansas City, MO 64121-9335

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. [_____] in your favor, at the request and for the account of the Applicant, The Kansas City Southern Railway Company, in the amount of exactly three million five-hundred thousand U.S. dollars (U.S.\$3,500,000) (the "Maximum Amount"). We hereby authorize you, the U.S. Environmental Protection Agency (the "Beneficiary"), to draw at sight on us, [Insert name and address of issuing bank], an aggregate amount equal to the Maximum Amount upon presentation of:

- (1) Your sight draft, bearing reference to this Letter of Credit No. [_____] (which may, without limitation, be presented in the form attached hereto as Exhibit A); and
- (2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to [that certain Consent Decree, dated _____, 20__, by and among the United States and The Kansas City Southern Railway Company], entered into by the parties thereto in accordance with the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)."

This letter of credit is effective as of [insert issuance date] and shall expire on [a date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [the date which is at least 1 year later] and on each successive expiration date, unless, at least sixty (60) days before the current expiration date, we notify both you and The Kansas City Southern Railway Company by certified mail that we have decided not to extend this letter of

credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall immediately thereupon be available to you upon presentation of your sight draft for a period of at least sixty (60) days after the date of receipt by both you and The Kansas City Southern Railway Company of such notification, as shown on signed return receipts.

Multiple and partial draws on this letter of credit are expressly permitted, up to an aggregate amount not to exceed the Maximum Amount. Whenever this letter of credit is drawn on, under, and in compliance with the terms hereof, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft in immediately available funds directly into such account or accounts as may be specified in accordance with your instructions.

All banking and other charges under this letter of credit are for the account of the Applicant.

This letter of credit is subject to the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce.

Very Truly Yours,

[Name and address of issuing institution]

[Signature(s), name(s), and title(s) of official(s) of issuing institution]

[Date]

Exhibit A to Appendix F
Form of Sight Draft

United States Environmental Protection Agency Sight Draft

TO: [Insert name of Issuing Bank]
[Insert address of Issuing Bank]

RE: Letter of Credit No. [_____]

DATE: [Insert date that draw is made]

TIME: [Insert time of day that draw is made]

This draft is drawn under your Irrevocable Letter of Credit No. [_____]. Pay to the order of the United States Environmental Protection Agency, in immediately available funds, the amount of three million five-hundred thousand U.S. dollars (U.S.\$3,500,000) or, if no amount certain is specified, the total balance remaining available under your Irrevocable Letter of Credit No. [_____].

Pay such amount as is specified in the immediately preceding paragraph by FedWire Electronic Funds Transfer ("EFT") to the Ruston Foundry RD/RA Future Costs Special Account within the EPA Hazardous Substance Superfund in accordance with current EFT procedures, referencing File Number 2007V00529, EPA Region and Site Spill ID Number 061F, and DOJ Case Number 90-11-2-08002, as follows:

[Insert specific Special Account wiring instructions and information].

This Sight Draft has been duly executed by the undersigned, an authorized representative or agent of the United States Environmental Protection Agency, whose signature hereupon constitutes an endorsement.

By: _____ [signature]
_____ [name]
_____ [title]